

ttgtttgcca aactggtggg caatatcgcc gaagacggcg gcaaactgac ggattaccta 420
gtttcgcatg cgcgcctgca accctatcgag gcaggcaaaa gcggctatgc cgccgtgcag 480
aacggacgct atgtgctgga aatcgacagc gaaggggcgt tttatccg ccggccgcat 540
tattga 546

<210> 712
<211> 181
<212> PRT
<213> Neisseria meningitidis

<400> 712
Met Leu Lys Thr Ser Phe Ala Val Leu Gly Gly Cys Leu Leu Leu Ala
1 5 10 15

Ala Cys Gly Lys Ser Glu Asn Thr Ala Glu Gln Pro Gln Asn Ala Val
20 25 30

Gln Ser Ala Pro Lys Pro Val Phe Lys Val Lys Tyr Ile Asp Asn Thr
35 40 45

Ala Ile Ala Gly Leu Asp Leu Gly Gln Ser Ser Glu Gly Lys Thr Asn
50 55 60

Asp Gly Lys Lys Gln Ile Ser Tyr Pro Ile Lys Gly Leu Pro Glu Gln
65 70 75 80

Asn Val Ile Arg Leu Ile Gly Lys His Pro Gly Asp Leu Glu Ala Val
85 90 95

Ser Gly Lys Cys Met Glu Thr Asp Asp Lys Asp Ser Pro Ala Gly Trp
100 105 110

Ala Glu Asn Gly Val Cys His Thr Leu Phe Ala Lys Leu Val Gly Asn
115 120 125

Ile Ala Glu Asp Gly Gly Lys Leu Thr Asp Tyr Leu Val Ser His Ala
130 135 140

Ala Leu Gln Pro Tyr Gln Ala Gly Lys Ser Gly Tyr Ala Ala Val Gln
145 150 155 160

Asn Gly Arg Tyr Val Leu Glu Ile Asp Ser Glu Gly Ala Phe Tyr Phe
165 170 175

Arg Arg Arg His Tyr
180

<210> 713
<211> 330
<212> DNA
<213> Neisseria meningitidis

<400> 713
cctcttaaag gcttgccgga acaaaaacgtc gtccggctga ccggcaagca tcccaacgac 60
ttggaagccg tcgtcggcaa atgtatggaa accgacggaa agggcgcgcc ttccggctgg 120

gcggcaaacg gcgtgtgcca tacttgttt gccaaactgg tggcaatat cgccgaagac 180
ggcgcaaac tgacggatta cctgatttcg cattccgccc tgcaacccta tcaggcaggc 240
aaaagcggct atgccgcgt gcagaacgga cgctatgtgc tggaaatcga cagcgagggg 300
gcgttttatt tccgcccggc ccattattga 330

<210> 714
<211> 109
<212> PRT
<213> Neisseria meningitidis

<400> 714
Pro Leu Lys Gly Leu Pro Glu Gln Asn Val Val Arg Leu Thr Gly Lys
1 5 10 15

His Pro Asn Asp Leu Glu Ala Val Val Gly Lys Cys Met Glu Thr Asp
20 25 30

Gly Lys Gly Ala Pro Ser Gly Trp Ala Ala Asn Gly Val Cys His Thr
35 40 45

Leu Phe Ala Lys Leu Val Gly Asn Ile Ala Glu Asp Gly Gly Lys Leu
50 55 60

Thr Asp Tyr Leu Ile Ser His Ser Ala Leu Gln Pro Tyr Gln Ala Gly
65 70 75 80

Lys Ser Gly Tyr Ala Ala Val Gln Asn Gly Arg Tyr Val Leu Glu Ile
85 90 95

Asp Ser Glu Gly Ala Phe Tyr Phe Arg Arg Arg His Tyr
100 105

<210> 715
<211> 534
<212> DNA
<213> Neisseria gonorrhoeae

<400> 715
atgtttccc ccgacaaaaac cctttcctc tgtctcgccg cactgctct cgcctcatgc 60
ggcacgacct ccggcaaaca ccgccaaccc aaacccaaac agacagtccg gcaaattcaa 120
gcccgtccgca tcagccacat cggccgcaca caaggctcgc aggaactcat gctccacagc 180
ctccgactca tcggcacgccc ctacaaatgg ggcggcagca gcacccgcaac cggcttcgac 240
tgccagccgca tgattcaatt ggtttacaaa aacgcctca acgtcaagct gccgcgcacc 300
gccccgcaca tggccgcggc aagccgcata atccccgaca gcccctcaa gcccggcgcac 360
atcgtattct tcaacacccgg cggccgcacac cgctactcac acgtcggact ctacatcgac 420
aacggcgaat tcatccatgc cccccggcagc ggcaaaacca tcaaaaccga aaaactctcc 480
acaccgtttt acgccaaaaa ctacatttggc gcgcatacg tttttacaga atga 534

<210> 716
<211> 177
<212> PRT
<213> Neisseria gonorrhoeae

<400> 716

Met Phe Ser Pro Asp Lys Thr Leu Phe Leu Cys Leu Gly Ala Leu Leu
1 5 10 15

Leu Ala Ser Cys Gly Thr Thr Ser Gly Lys His Arg Gln Pro Lys Pro
20 25 30

Lys Gln Thr Val Arg Gln Ile Gln Ala Val Arg Ile Ser His Ile Gly
35 40 45

Arg Thr Gln Gly Ser Gln Glu Leu Met Leu His Ser Leu Gly Leu Ile
50 55 60

Gly Thr Pro Tyr Lys Trp Gly Gly Ser Ser Thr Ala Thr Gly Phe Asp
65 70 75 80

Cys Ser Gly Met Ile Gln Leu Val Tyr Lys Asn Ala Leu Asn Val Lys
85 90 95

Leu Pro Arg Thr Ala Arg Asp Met Ala Ala Ala Ser Arg Lys Ile Pro
100 105 110

Asp Ser Arg Leu Lys Ala Gly Asp Ile Val Phe Phe Asn Thr Gly Gly
115 120 125

Ala His Arg Tyr Ser His Val Gly Leu Tyr Ile Gly Asn Gly Glu Phe
130 135 140

Ile His Ala Pro Gly Ser Gly Lys Thr Ile Lys Thr Glu Lys Leu Ser
145 150 155 160

Thr Pro Phe Tyr Ala Lys Asn Tyr Leu Gly Ala His Thr Phe Phe Thr
165 170 175

Glu

<210> 717
<211> 534
<212> DNA
<213> Neisseria meningitidis

<400> 717
atgtttcccc ccgacaaaaac cctttcctc tgtctcagcg cactgctcct cgcctcatgc 60
ggcacgacct ccggcaaaaca ccgccaacccg aaacccaaac agacagtccg gcaaatccaa 120
gccgtccgca tcagccacat cgaccgcaca caaggctcgc aggaactcat gctccacagc 180
ctcggactca tcggcacgccc ctacaaatgg ggcggcagca gcaccgcaac cggcttcgat 240
tgcagcggca tgattcaatt cgtttacaar aacgcctca acgtcaagct gccgcgcacc 300
gcccgcgaca tggcggcggc aagccgsaaa atccccgaca gccgcgtcaa ggccggcgcac 360
ctcgtattct tcaacacccgg cggcgcacac cgctactcac acgtcggact ctacatcgcc 420
aacggcgaat tcatccatgc coccagcagc ggcaaaaacca tcaaaaaccga aaaactctcc 480
acaccgtttt acgccaaaaaa ctacctcgcc gcacatactt ttttacaga atga 534

<210> 718
<211> 177
<212> PRT

<213> Neisseria meningitidis

<400> 718

Met Phe Pro Pro Asp Lys Thr Leu Phe Leu Cys Leu Ser Ala Leu Leu
1 5 10 15

Leu Ala Ser Cys Gly Thr Thr Ser Gly Lys His Arg Gln Pro Lys Pro
20 25 30

Lys Gln Thr Val Arg Gln Ile Gln Ala Val Arg Ile Ser His Ile Asp
35 40 45

Arg Thr Gln Gly Ser Gln Glu Leu Met Leu His Ser Leu Gly Leu Ile
50 55 60

Gly Thr Pro Tyr Lys Trp Gly Gly Ser Ser Thr Ala Thr Gly Phe Asp
65 70 75 80

Cys Ser Gly Met Ile Gln Phe Val Tyr Lys Asn Ala Leu Asn Val Lys
85 90 95

Leu Pro Arg Thr Ala Arg Asp Met Ala Ala Ala Ser Arg Lys Ile Pro
100 105 110

Asp Ser Arg Xaa Lys Ala Gly Asp Leu Val Phe Phe Asn Thr Gly Gly
115 120 125

Ala His Arg Tyr Ser His Val Gly Leu Tyr Ile Gly Asn Gly Glu Phe
130 135 140

Ile His Ala Pro Ser Ser Gly Lys Thr Ile Lys Thr Glu Lys Leu Ser
145 150 155 160

Thr Pro Phe Tyr Ala Lys Asn Tyr Leu Gly Ala His Thr Phe Phe Thr
165 170 175

Glu

<210> 719

<211> 534

<212> DNA

<213> Neisseria meningitidis

<400> 719

atgtttcccc ccgacaaaac cctttcctc tgtctcagcg cactgctcct cgccatgc 60
ggcacgacct ccggcaaca ccgcacccg aaacccaaac agacagtccg gcaaatccaa 120
gccgtccgca tcagccacat cgaccgcaca caaggctcgc aggaactcat gtcacacagc 180
ctcgactca tcggcacgccc ctacaaatgg ggcggcagca gcacccgcaac cggcttcgat 240
tgcagcggca tgattcaatt cgtttacaaa aacgcctca acgtcaagct gccgcgcacc 300
gcccgccaca tggcggcggc aagccgcaaa atccccgaca gccgccttaa ggccggcgcac 360
ctcgatattct tcaacaccgg cgccgcacac cgctactcac acgtcggact ctatatcgcc 420
aacggcgaat tcatccatgc ccccagcagc ggcaaaacca tcaaaaccca aaaaactctcc 480
acaccgttt acgccaaaaa ctacctcgcc gcacatactt tctttacaga atga 534

<210> 720
 <211> 177
 <212> PRT
 <213> Neisseria meningitidis

<400> 720
 Met Phe Pro Pro Asp Lys Thr Leu Phe Leu Cys Leu Ser Ala Leu Leu
 1 5 10 15

 Leu Ala Ser Cys Gly Thr Thr Ser Gly Lys His Arg Gln Pro Lys Pro
 20 25 30

 Lys Gln Thr Val Arg Gln Ile Gln Ala Val Arg Ile Ser His Ile Asp
 35 40 45

 Arg Thr Gln Gly Ser Gln Glu Leu Met Leu His Ser Leu Gly Leu Ile
 50 55 60

 Gly Thr Pro Tyr Lys Trp Gly Gly Ser Ser Thr Ala Thr Gly Phe Asp
 65 70 75 80

 Cys Ser Gly Met Ile Gln Phe Val Tyr Lys Asn Ala Leu Asn Val Lys
 85 90 95

 Leu Pro Arg Thr Ala Arg Asp Met Ala Ala Ala Ser Arg Lys Ile Pro
 100 105 110

 Asp Ser Arg Leu Lys Ala Gly Asp Leu Val Phe Phe Asn Thr Gly Gly
 115 120 125

 Ala His Arg Tyr Ser His Val Gly Leu Tyr Ile Gly Asn Gly Glu Phe
 130 135 140

 Ile His Ala Pro Ser Ser Gly Lys Thr Ile Lys Thr Glu Lys Leu Ser
 145 150 155 160

 Thr Pro Phe Tyr Ala Lys Asn Tyr Leu Gly Ala His Thr Phe Phe Thr
 165 170 175

 Glu

<210> 721
 <211> 780
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 721
 atgctgcggc attaggaaa cgacttcgcc ttggcgcggt tgttttcga tgctgcgggt 60
 gatgtgccac tgctggcga tggtcaggag gtttgtgacc acccagtaga gaaccaaacc 120
 ggcaggaaag aagaagaaca tgacggagaa aaccaacggc atgattttca tcatttcgc 180
 ctgcacatcggt tcggtcggcg gcgggttcag ataggttgg gcgaacatcg ttgcgcgc 240
 aatgatgggc aggatgtagt aggggtcgcc gcggctgagg tcggtaatcc agccagcca 300
 aggtgcctgg cgcaattcta cgaggcgaa caatgccag tacaagccga tgaagacggg 360
 gatttgcAAC agcataggca gacagccgcc cagcgggttg atttcctcg .cttcggaaag 420
 ctgcacatcgc tttgcgtgtt gcggcatacg gtcgtcgccc tattttctt tgatggctcg 480

cagttcggt gcggcggcac gcatttcgc catcgaacgg taggaggcgt tggtaatgg 540
atacagtacg gcttgacga tggatgtcaa aacgacgatt gcccagcccc agttgccat 600
aatgttgcg agttggttca ggagccagaa gagcggcgat gccaaccagt gtactttacc 660
gtatgtttt gccagttgca ggttgtcggc gatgttgcg ataacggatg tggttgcgg 720
accggcatac aggttggaccg ccattttcgg ttttggcccc cgggttggga tagcggttaa 780

<210> 722

<211> 259

<212> PRT

<213> Neisseria gonorrhoeae

<400> 722

Met Leu Arg His Leu Gly Asn Asp Phe Ala Leu Gly Ala Leu Phé Phe
1 5 10 15

Asp Ala Ala Val Asp Val Pro Leu Leu Gly Asp Gly Gln Glu Val Val
20 25 30

Asp His Pro Val Glu Asn Gln Thr Gly Arg Glu Glu Glu His Asp
35 40 45

Gly Glu Asn Gln Arg His Asp Phe His His Phe Arg Leu His Arg Val
50 55 60

Gly Arg Arg Arg Val Gln Ile Gly Leu Gly Glu His Arg Cys Arg His
65 70 75 80

Asn Asp Gly Gln Asp Val Val Gly Val Gly Ala Ala Glu Val Gly Asn
85 90 95

Pro Ala Gln Pro Arg Cys Leu Ala Gln Phe Tyr Gly Gly Glu Gln Cys
100 105 110

Pro Val Gln Ala Asp Glu Asp Gly Asp Leu Gln Gln His Arg Gln Thr
115 120 125

Ala Ala Gln Arg Val Asp Phe Leu Val Phe Glu Lys Leu His His Arg
130 135 140

Leu Leu Leu Arg His Thr Val Val Ala Val Phe Phe Phe Asp Gly Leu
145 150 155 160

Gln Phe Gly Cys Gly Gly Thr His Phe Arg His Arg Thr Val Gly Gly
165 170 175

Val Gly Gln Trp Ile Gln Tyr Gly Phe Asp Asp Asp Gly Gln Asn Asp
180 185 190

Asp Cys Pro Ala Pro Val Ala Asp Asn Val Val Gln Leu Val Gln Glu
195 200 205

Pro Glu Glu Arg Arg Cys Glu Pro Val Tyr Phe Thr Val Val Phe Cys
210 215 220

Gln Leu Gln Val Val Gly Asp Val Cys Asp Asn Gly Cys Gly Leu Arg
225 230 235 240

Thr Gly Ile Gln Val Asp Arg His Phe Arg Phe Trp Pro Pro Gly Trp

245

250

255

Asp Ser Gly

<210> 723

<211> 1025

<212> DNA

<213> Neisseria meningitidis

<400> 723

atgctgcggc attaggaaa cgacttcgcc ttggggcggtt gttttcgat gctgcgggtg 60
atgtgccatt gctggcgat ggtcaggagg ttgttgacta cccagttacaa taccagaccg 120
gcaggagaaga agaagaacat gacggagaaa accaacggca tgatttcat cattttcgcc 180
tgcacatcggtt cggtcggcg cgggttcaga taagtttggg cgaacatcgat tgccgcata 240
atgatgggcgca ggatgttagta ggggtcggcg cggctgagggt cggtaatcca acccagccaa 300
ggtgtcctggc gcaattctac ggaggcgaac aatgcctaatt acaatccgat gaagacgggg 360
atttgcaca gcataggcag gcagccccc agcgggttga ttttctcgat tggtaaagc 420
tgcacatcatcg cctgttggttg cgccatcacgg tcgtcgcgtt atttctctt gatgcttgc 480
agtgttgggtg cggcggcacy cattttcgca atagagcggtt aagaggcggtt ggtcaatgg 540
tacagtacgg ctgttgcgtt gatggtaaaa acgataatcg cccagccccca gttgccatgt 600

atgttgcgtt gttgggttcag gagccagaag agcggggagg cgaaccagtg tactttgcgt 660
tagtctttgg ccagttgcag gtgtcggcg atgttgcgt tgacggatgt ggtctgcggg 720
ccggcgtaga ggttgcgtt ggttgcgtt tcgcgcgtt ttggatggcg gctaaaggca 780
cgctgacgct ggtgcgtgtac agttgcgt tgccgcgtt gatgtcgttg ttgcactcgc 840
ctgcggcgca aacgctttgt ctgccttttag gttggagaat ccagggtggac atgaagtgg 900
gttcaatcat gccgagccag ccgggtcgcccc ttggatggcgat gtattcgccc tcggatttgc 960
cggatttggc atcgtcgtcc aagtgcggaaa agctgacttt ttggaaagtttgc cttcaggggg 1020
tataa 1025

<210> 724

<211> 340

<212> PRT

<213> Neisseria meningitidis

<400> 724

Met Leu Arg His Leu Gly Asn Asp Phe Ala Leu Gly Ala Leu Phe Phe
1 5 10 15

Asp Ala Ala Val Asp Val Pro Leu Leu Gly Asp Gly Gln Glu Val Val
20 25 30

Asp Tyr Pro Val Gln Tyr Gln Thr Gly Arg Glu Glu Glu His Asp
35 40 45

Gly Glu Asn Gln Arg His Asp Phe His His Phe Arg Leu His Arg Val
50 55 60

Gly Arg Arg Arg Val Gln Ile Ser Leu Gly Glu His Arg Cys Arg His
65 70 75 80

Asn Asp Gly Gln Asp Val Val Gly Val Gly Ala Ala Glu Val Gly Asn
85 90 95

Pro Thr Gln Pro Arg Cys Leu Ala Gln Phe Tyr Gly Gly Glu Gln Cys
100 105 110

Pro Ile Gln Ser Asp Glu Asp Gly Asp Leu Gln Gln His Arg Gln Ala
115 120 125

Ala Ala Gln Arg Val Asp Phe Leu Val Cys Val Lys Leu His His Arg
130 135 140

Leu Leu Leu Arg His Thr Val Val Ala Val Phe Leu Phe Asp Gly Leu
145 150 155 160

Gln Phe Gly Cys Gly Gly Thr His Phe Arg His Arg Ala Val Arg Gly
165 170 175

Val Gly Gln Trp Ile Gln Tyr Gly Phe Asp Asp Asp Gly Asn Asp Asn
180 185 190

Arg Pro Ala Pro Val Ala Asp Asp Val Val Gln Leu Val Gln Glu Pro
195 200 205

Glu Glu Arg Gly Gly Glu Pro Val Tyr Phe Ala Val Val Phe Gly Gln
210 215 220

Leu Gln Val Val Gly Asp Val Cys Asp Asp Gly Cys Gly Leu Arg Ala
225 230 235 240

Gly Val Glu Val Asp Gly Gly Phe Gly Phe Ala Pro Phe Trp Met Ala
245 250 255

Ala Lys Gly Thr Leu Thr Leu Val Leu Tyr Ser Leu Ser Leu Arg Arg
260 265 270

Leu Met Ser Met Leu His Ser Pro Ala Ala Gln Thr Leu Cys Leu Pro
275 280 285

Leu Gly Trp Arg Ile Gln Val Asp Met Lys Trp Cys Ser Ile Met Pro
290 295 300

Ser Gln Pro Val Gly Val Leu Arg Met Tyr Ser Ala Ser Asp Leu Pro
305 310 315 320

Asp Leu Ala Ser Ser Ser Lys Ser Glu Lys Leu Thr Phe Trp Lys Leu
325 330 335

Pro Ser Gly Val
340

<210> 725
<211> 1026
<212> DNA
<213> Neisseria meningitidis

<400> 725
atgctgcggc atttaggaaa cgacttcgcc ttgggcgcgt tgttttcga tgctgcggtt 60
gatgtccat tgctggcgaa tggtcaggag gtttgtatc acccagtaca ataccagacc 120
ggcaggaaag aagaagaaca tgacggagaa aaccaaaggc atgatttca tcatttcgc 180
ctgcatcggg tcggtcggcg gcgggttcag ataggtttgg gccaacatcg ttgcgcctat 240
aatgatgggc aggatgtatc aggggtcgcc gcggctgagg tcggtaatcc aaccaggca 300
aggtgcctgg cgcattcta cggagggcga caatgcccua tacaatccga tgaagacggg 360
gatttgcac acataggca ggcagccgc caggggttg attttctgt ctgtgtaaag 420
ctgcatcatg gcttgggtgt ggcgcatacg gtcgtcgccg tatttctott tgatggcttg 480
cagtttggc gcggcggcac gcatttcgc catcgaacgg taagaggcgt tggtaatgg 540
atacagtagc gcttgacga tgatggtaa aacgataatc gcccagcccc agttggccgat 600
gatgttgc agttgggtca aaagccaaaa gagggggggag gcgaaccagt gtactttgcc 660
gtagtccttg gccagttgc ggttgtcgcc gatgttgcg ataacggatg tggctctgtgg 720
gcggcgtag aggttgcgtgg aggcttcggt ttgcacccgt tttggatagc ggctaaaggc 780
acgctgacgc tgggtctgtc cagcttgcg ttgcggcggt tgatgtcgat acggcagtcg 840
ccagcggcgc aaacgctttg tccgccttgc ggttggagga tccaggtgga catgaagtgg 900
tgttcaatca tgccgagcca gccggctggg gtttgcggta tggatccggc ctgcgatttg 960
ccggatttgg catcgtcgatc caagtcggag aagctgactt tttggaaagtt gccttcagg 1020
gtataa 1026

<210> 726
 <211> 340
 <212> PRT
 <213> Neisseria meningitidis

 <400> 726
 Met Leu Arg His Leu Gly Asn Asp Phe Ala Leu Gly Ala Leu Phe Phe
 1 5 10 15

 Asp Ala Ala Val Asp Val Pro Leu Leu Gly Asp Gly Gln Glu Val Val
 20 25 30

 Asp His Pro Val Gln Tyr Gln Thr Gly Arg Glu Glu Glu Glu His Asp
 35 40 45

 Gly Glu Asn Gln Arg His Asp Phe His His Phe Arg Leu His Arg Val
 50 55 60

 Gly Arg Arg Arg Val Gln Ile Gly Leu Gly Glu His Arg Cys Arg His
 65 70 75 80

 Asn Asp Gly Gln Asp Val Val Gly Val Gly Ala Ala Glu Val Gly Asn
 85 90 95

 Pro Thr Gln Pro Arg Cys Leu Ala Gln Phe Tyr Gly Gly Glu Gln Cys
 100 105 110

 Pro Ile Gln Ser Asp Glu Asp Gly Asp Leu Gln Gln His Arg Gln Ala
 115 120 125

 Ala Ala Gln Arg Val Asp Phe Leu Val Cys Val Lys Leu His His Gly
 130 135 140

 Leu Leu Leu Arg His Thr Val Val Ala Val Phe Leu Phe Asp Gly Leu
 145 150 155 160

Gln Phe Gly Arg Gly Gly Thr His Phe Arg His Arg Thr Val Arg Gly
 165 170 175
 Val Gly Gln Trp Ile Gln Tyr Gly Phe Asp Asp Asp Gly Asn Asp Asn
 180 185 190
 Arg Pro Ala Pro Val Ala Asp Asp Val Val Gln Leu Val Gln Lys Pro
 195 200 205
 Lys Glu Gly Gly Gly Glu Pro Val Tyr Phe Ala Val Val Phe Gly Gln
 210 215 220
 Leu Gln Val Val Gly Asp Val Cys Asp Asn Gly Cys Gly Leu Trp Ala
 225 230 235 240
 Gly Val Glu Val Asp Gly Gly Phe Gly Phe Ala Pro Phe Trp Ile Ala
 245 250 255
 Ala Lys Gly Thr Leu Thr Leu Val Leu Tyr Ser Leu Ser Leu Arg Arg
 260 265 270
 Leu Met Ser Ile Arg Gln Ser Pro Ala Ala Gln Thr Leu Cys Pro Pro
 275 280 285
 Leu Gly Trp Arg Ile Gln Val Asp Met Lys Trp Cys Ser Ile Met Pro
 290 295 300
 Ser Gln Pro Val Gly Val Leu Arg Met Tyr Ser Ala Ser Asp Leu Pro
 305 310 315 320
 Asp Leu Ala Ser Ser Ser Lys Ser Glu Lys Leu Thr Phe Trp Lys Leu
 325 330 335
 Pro Ser Gly Val
 340

<210> 727
 <211> 525
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 727
 atgttgcgga ttgctgctgc caatcagttg ggcggtcgaa atggtgccgc ggtggaaac 60
 ggggtcgata agtttggcg tggtgctgat aatcaggatg agtttttggaa aggaaacctg 120
 attgtatcg gcgcgtccgg gcgtgccgt gtaacggtag ccgtggcgca attcgagcgt 180
 gcgtttgttg tccttcagcg agaagttacc ttcttggcg aagatgatgt tgtcgccgccc 240
 gttttgtcc tgttcgcgca ggaacaggtt tttcatgatg ccggattcgg tgtcaaaggt 300
 ttgcacgaaa taaaccctgc cggtgcgtt gcccaagttt ttgaactcgc cggcttccac 360
 caaagacaat tcctgcttct gcttcaaaat ttggcatat tcgcggctgc gcagctctgc 420
 ccacggtatc acccaaagct gcatgacggc aatcaggatg gcaaacggca cggcaaactg 480
 catgacgggg cgtatccact gttcaacgc caatccgcag gatac 525

<210> 728
 <211> 174

<212> PRT

<213> Neisseria gonorrhoeae

<400> 728

Met Leu Arg Ile Ala Ala Asn Gln Leu Gly Gly Arg Asn Gly Ala
1 5 10 15

Ala Val Gly Asn Gly Val Asp Lys Phe Gly Arg Gly Ala Asp Asn Gln
20 25 30

Val Glu Phe Leu Glu Gly Asn Leu Ile Val Val Gly Ala Ser Gly Arg
35 40 45

Ala Ala Val Thr Val Ala Val Ala Gln Phe Glu Arg Ala Phe Val Val
50 55 60

Leu Gln Arg Glu Val Thr Phe Phe Gly Glu Asp Asp Val Val Ala Ala
65 70 75 80

Val Phe Val Leu Phe Ala Gln Glu Gln Val Phe His Asp Ala Gly Phe
85 90 95

Gly Val Lys Gly Phe Asp Glu Ile Asn Pro Ala Val Ala Leu Ala Gln
100 105 110

Val Ile Glu Leu Ala Gly Phe His Gln Arg Gln Phe Leu Leu Leu Leu
115 120 125

Gln Asn Phe Gly Ile Phe Ala Ala Ala Gln Leu Cys Pro Arg Tyr His
130 135 140

Pro Lys Leu His Asp Gly Asn Gln Asp Gly Lys Arg His Gly Lys Leu
145 150 155 160

His Asp Gly Ala Tyr Pro Leu Phe Gln Arg Gln Ser Ala Gly
165 170

<210> 729

<211> 525

<212> DNA

<213> Neisseria meningitidis

<400> 729

atgttgcggg ttgctgctgc caatcagttg ggcggtcgga atggtaacggc ggtggggaaac 60
ggggtcgtat agtttggcg tggtgctgtat aatcagggtt agttttggaa aggaaacctg 120
attgtatcg ggcgtccgg gcgtgccgt gtaacggtag ccgtggcgca attcgagcgt 180
gcgtttgttg tcgttcagcg agaagttacc ttctttggcg aagatgatgt tgcggccccc 240
gtttttgtcc tggtcgcgca ggaacagggt tttcatgatg ccggattcgg tatcgaaggt 300
ttcgacaaaa taaaacctgc cggtgcgcctt gcccaaactg ttgaactcgc ctgcctccac 360
caaagacaat tcctgcttct gcttcaggat ttcaagcgtat tcgcggctgc gtatctctgc 420
ccacggatc acccaaagct gcatgacggc aaccaaaacg gcaaacggca cggcaaactg 480
catcaccggg cgtatccatt gttcaatgc caatccgcag gata 525

<210> 730

<211> 174

<212> PRT
<213> Neisseria meningitidis

<400> 730
Met Leu Arg Val Ala Ala Ala Asn Gln Leu Gly Gly Arg Asn Gly Thr
1 5 10 15

Ala Val Gly Asn Gly Val Asp Glu Phe Gly Arg Gly Ala Asp Asn Gln
20 25 30

Val Glu Phe Leu Glu Gly Asn Leu Ile Val Val Gly Ala Ser Gly Arg
35 40 45

Ala Ala Val Thr Val Ala Val Ala Gln Phe Glu Arg Ala Phe Val Val
50 55 60

Val Gln Arg Glu Val Thr Phe Phe Gly Glu Asp Asp Val Val Ala Ala
65 70 75 80

Val Phe Val Leu Phe Ala Gln Glu Gln Val Phe His Asp Ala Gly Phe
85 90 95

Gly Ile Glu Gly Phe Asp Lys Ile Asn Pro Ala Val Ala Leu Ala Gln
100 105 110

Thr Val Glu Leu Ala Cys Leu His Gln Arg Gln Phe Leu Leu Leu
115 120 125

Gln Asp Phe Ser Val Phe Ala Ala Ala Xaa Leu Cys Pro Arg Tyr His
130 135 140

Pro Lys Leu His Asp Gly Asn Gln Asn Gly Lys Arg His Gly Lys Leu
145 150 155 160

His His Arg Ala Tyr Pro Leu Phe Gln Cys Gln Ser Ala Gly
165 170

<210> 731
<211> 525
<212> DNA
<213> Neisseria meningitidis

<400> 731
atgttgcggg ttgctgctgc caatcagttg ggcggtcgga atggtaacggc ggtggaaac 60
ggggtcgtatc agttttggcg tggctgtat aatcagggtt agtttttggg aggaaacctg 120
attgttagtcg gcgctccgg gcgtgccgt gtaacggtag ccgtggcgca attcgagcgt 180
gcgtttgttg tcgttcagcg agaagttaact ttctttggcg aagatgatgt tgtcggcc 240
gtttttgtcc tggccgcgca ggaacaggtt tttcatgatg ccggattcgg tatcgaaggt 300
ttcgacaaaaaaa taaaccctgc cggtgcgtt gccaaactg ttgaacccgc ctgcctccac 360
caaagacaat tcctgcttct gcttcaggat ttcaagctat tcgcggctgc gtagctctgc 420
ccacggatc acccaaagct gcatgacggc aaccaaactg gcaaacggca cggcaaactg 480
catcaccggg cgtatccatt gttcaatgc caatccgcag gatag 525

<210> 732
<211> 173

<212> PRT

<213> Neisseria meningitidis

<400> 732

Met Leu Arg Val Ala Ala Asn Gln Leu Gly Gly Arg Asn Gly Thr
1 5 10 15

Ala Val Gly Asn Gly Val Asp Glu Phe Gly Arg Gly Ala Asp Asn Gln
20 25 30

Val Glu Phe Leu Glu Gly Asn Leu Ile Val Val Gly Ala Ser Gly Arg
35 40 45

Ala Ala Val Thr Val Ala Val Ala Gln Phe Glu Arg Ala Phe Val Val
50 55 60

Val Gln Arg Glu Val Thr Phe Phe Gly Glu Asp Asp Val Val Ala Ala
65 70 75 80

Val Phe Val Leu Phe Ala Gln Glu Gln Val Phe His Asp Ala Gly Phe
85 90 95

Gly Ile Glu Gly Phe Asp Lys Ile Asn Pro Ala Val Ala Leu Ala Gln
100 105 110

Thr Val Glu Pro Ala Cys Leu His Gln Arg Gln Phe Leu Leu Leu Leu
115 120 125

Gln Asp Phe Ser Val Phe Ala Ala Ala Leu Cys Pro Arg Tyr His Pro
130 135 140

Lys Leu His Asp Gly Asn Gln Asn Gly Lys Arg His Gly Lys Leu His
145 150 155 160

His Arg Ala Tyr Pro Leu Phe Gln Cys Gln Ser Ala Gly
165 170

<210> 733

<211> 1263

<212> DNA

<213> Neisseria gonorrhoeae

<400> 733

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caaaccgcac aagatgcttc ggactcggaa tgccgtctga agcaccgttt ggatcaggca 180
accaggcgcc tccagttcga cagcatcaac ctcatcgAAC acatcctgcc cgatgtccgc 240
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tggcagaccc aagccatccc gcaaaccgaa agcaagtccg acaaaccctg gtttgactt 360
ccacaaacat ccgaacggaa aaaaccggaa cacgtcctcg tcatacggtgc aggattgcc 420
ggcgcatcga cggcccacgc cttagcatca cacggcattt ccgttaccgt attggaagcc 480
cgaaaagccg ctcaagccgc cagcggcaac cggcaaggc tgcttacgc caaaatctcg 540
ccgcacgaca cgggacagac cgaactgctg cttggccgct acggctacac caaacgcctg 600
ctcgacaca tcctgcccga ctccgacact tggggcggca acggcatcat ccacactaat 660
tacagccgca ccgaacaaca acgcaatcac gaattgggtt tgcaaaaaca ccataaccac 720
ctctaccgca gcatcagtc tgcagaagcc gaaaaaatcg ccggcatccc gctgaacacg 780

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gcattcgccc gcaccctcct cagccatccg ctgatcgaa tatatgaaaa cacaacgtta 900
accggcatt cccacgacgg agaaaagtgg attgcaagca cgccaaacgg cacattacc 960
gccacacaca tcatactactg caccggcgcg cacagccct gcctgcccga aaccaacctc 1020
gccgcctac ccctcaggca aatacgcgga caaaccggcc tcacaccgtc caccggctt 1080
tccgaacaac tgcgttgcgc cgtttcaggc gaaagctaca tcagccgtc gtggcacgga 1140
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gaagaagct caaaccgcca agcattggca cacctaacc cgcgccttgc cgaatcattg 1260
ttt 1263

<210> 734

<211> 421

<212> PRT

<213> Neisseria gonorrhoeae

<400> 734

Met Asp Asn Leu Val Trp Asp Gly Ile Pro Asp Ile Arg Thr Leu Asp
1 5 10 15

Gln Thr Ile Arg Lys His Ala His Pro Leu Asn Leu Ile Val Cys Leu
20 25 30

Pro Asp Asn Gln Ile Pro Asp Phe Gln Thr Ala Gln Asp Ala Ser Asp
35 40 45

Ser Glu Cys Arg Leu Lys His Arg Leu Asp Gln Ala Thr Gln Cys Leu
50 55 60

Gln Phe Asp Ser Ile Asn Leu Ile Glu His Ile Leu Pro Asp Val Arg
65 70 75 80

Phe Trp Leu Val Pro Pro Ser Arg Thr Arg Arg Leu His Glu His Phe
85 90 95

His His Ile Ser Trp Gln Thr Glu Ala Ile Pro Gln Thr Glu Ser Lys
100 105 110

Ser Asp Lys Pro Trp Phe Ala Leu Pro Gln Thr Ser Glu Arg Lys Lys
115 120 125

Pro Glu His Val Leu Val Ile Gly Ala Gly Ile Ala Gly Ala Ser Thr
130 135 140

Ala His Ala Leu Ala Ser His Gly Ile Ser Val Thr Val Leu Glu Ala
145 150 155 160

Arg Lys Ala Ala Gln Ala Ala Ser Gly Asn Arg Gln Gly Leu Leu Tyr
165 170 175

Ala Lys Ile Ser Pro His Asp Thr Gly Gln Thr Glu Leu Leu Leu Ala
180 185 190

Gly Tyr Gly Tyr Thr Lys Arg Leu Leu Gly His Ile Leu Pro Asp Ser
195 200 205

Asp Thr Trp Gly Gly Asn Gly Ile Ile His Leu Asn Tyr Ser Arg Thr

210	215	220
Glu Gln Gln Arg Asn His Glu Leu Gly Leu Gln Lys His His Asn His		
225	230	235
Leu Tyr Arg Ser Ile Thr Ser Ala Glu Ala Glu Lys Ile Ala Gly Ile		
245	250	255
Pro Leu Asn Thr Pro Tyr Ala Glu Pro Leu Cys Gly Leu Tyr Trp Gln		
260	265	270
His Gly Val Trp Leu Asn Pro Pro Ala Phe Val Arg Thr Leu Leu Ser		
275	280	285
His Pro Leu Ile Glu Leu Tyr Glu Asn Thr Thr Leu Thr Gly Ile Ser		
290	295	300
His Asp Gly Glu Lys Trp Ile Ala Ser Thr Pro Asn Gly Thr Phe Thr		
305	310	315
Ala Thr His Ile Ile Tyr Cys Thr Gly Ala His Ser Pro Cys Leu Pro		
325	330	335
Glu Thr Asn Leu Ala Ala Leu Pro Leu Arg Gln Ile Arg Gly Gln Thr		
340	345	350
Gly Leu Thr Pro Ser Thr Pro Phe Ser Glu Gln Leu Arg Cys Ala Val		
355	360	365
Ser Gly Glu Ser Tyr Ile Ser Pro Ser Trp His Gly Leu His Cys Tyr		
370	375	380
Gly Ala Ser Phe Ile Pro Asn Ser Ser Asn Thr Gly Trp Asn Glu Ala		
385	390	395
Glu Glu Ala Ser Asn Arg Gln Ala Leu Ala His Leu Asn Pro Ala Leu		
405	410	415
Ala Glu Ser Leu Phe		
420		

<210> 735

<211> 1620

<212> DNA

<213> Neisseria meningitidis

<400> 735

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 caaacccgac aagatgcttc ggacgcggaa tgccgtctga agcaccgtt ggatcaggca 180
 atgcagtgcc tccagttcga cagcatcaac ctcatcgaac acatcctgcc cgatgtccgc 240
 ttctggctgg ttcccccttc acgcacccac cacctgcacg aacatttcca ccacatttcc 300
 tggcagaccc aagccatccc gcaaaccgaa agcaagcccg acaaaccctg gtttgactt 360
 ccacaaaacat ccgaacggca aaaaccggaa cacatcctcg ttatcggcgc gggcatatcc 420
 ggcgcggcaa cggcccacgc cttagcatca cacggcattt ccgttaccgt attggaagcc 480

cgaaaagccg cccaagccgc cagcggcaac cgccaaaggc tgctctacgc caaaatctcg 540
ccgcacgaca ccgaacagac cgaactttt cttgccggct acggctacac caaacgcctg 600
ctcggacaca tcctgcccga atccgaaacc tggggcggca acggcatcat ccacctcaat 660
tacagccgca ccgaacaaca acgcaatcac gaattgggtt tgcaaaaaaca ccataaccac 720
ctctaccgca gcatcacatc tgagaagcc gaaaaaatcg ccggtatccc actgtccgtc 780
ccatacgacc acctttcatg cgactctac tggcaacacg gcgtatggct caatccaccc 840
gcattcgtcc gcaccctcct caaccatccg ctcatggac tacacgaaga cacaccctt 900
accgacattt cccacgacgg ggaaaagtgg attgcaagca cggccaaacgg cacatttacc 960
gccacacaca tcatctactg caccggtgcg aacagccccct acctacccga aaccAACCTC 1020
gccgcctcgc ctctcaggca aatacgcggc caaaccggcc tcacaccgtc caccggctt 1080
tccgaacaac tgcgttgcgc cgtttcaggc gaaagctaca tcagcccggtc gtggcacgga 1140
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gmcawtgcag cccaaatcst agcytgccc catcccttt yacaacgct gcgcacgcc 1560
ctacacccca accgcaccat catccgcgc atcgtcagaa ggaaggatct aacccttaa 1620

<210> 736

<211> 539

<212> PRT

<213> Neisseria meningitidis

<400> 736

Met Asp Asn Leu Val Trp Asp Gly Ile Pro Asp Ile Arg Thr Leu Asp
1 5 10 15

Gln Ala Ile Arg Lys His Ala Pro Pro Leu Asn Leu Ile Ile Cys Leu
20 25 30

Pro Asp Asn Gln Ile Pro Asp Phe Gln Thr Ala Gln Asp Ala Ser Asp
35 40 45

Ala Glu Cys Arg Leu Lys His Arg Leu Asp Gln Ala Met Gln Cys Leu
50 55 60

Gln Phe Asp Ser Ile Asn Leu Ile Glu His Ile Leu Pro Asp Val Arg
65 70 75 80

Phe Trp Leu Val Pro Pro Ser Arg Thr His His Leu His Glu His Phe
85 90 95

His His Ile Ser Trp Gln Thr Glu Ala Ile Pro Gln Thr Glu Ser Lys
100 105 110

Pro Asp Lys Pro Trp Phe Ala Leu Pro Gln Thr Ser Glu Arg Gln Lys
115 120 125

Pro Glu His Ile Leu Val Ile Gly Ala Gly Ile Ser Gly Ala Ala Thr
130 135 140

Ala His Ala Leu Ala Ser His Gly Ile Ser Val Thr Val Leu Glu Ala
145 150 155 160

Arg Lys Ala Ala Gln Ala Ala Ser Gly Asn Arg Gln Gly Leu Leu Tyr
165 170 175

Ala Lys Ile Ser Pro His Asp Thr Glu Gln Thr Glu Leu Leu Leu Ala
180 185 190

Gly Tyr Gly Tyr Thr Lys Arg Leu Leu Gly His Ile Leu Pro Glu Ser
195 200 205

Glu Thr Trp Gly Gly Asn Gly Ile Ile His Leu Asn Tyr Ser Arg Thr
210 215 220

Glu Gln Gln Arg Asn His Glu Leu Gly Leu Gln Lys His His Asn His
225 230 235 240

Leu Tyr Arg Ser Ile Thr Ser Ala Glu Ala Glu Lys Ile Ala Gly Ile
245 250 255

Pro Leu Ser Val Pro Tyr Asp His Pro Ser Cys Gly Leu Tyr Trp Gln
260 265 270

His Gly Val Trp Leu Asn Pro Pro Ala Phe Val Arg Thr Leu Leu Asn
275 280 285

His Pro Leu Ile Gly Leu His Glu Asp Thr Pro Leu Thr Asp Ile Ser
290 295 300

His Asp Gly Glu Lys Trp Ile Ala Ser Thr Pro Asn Gly Thr Phe Thr
305 310 315 320

Ala Thr His Ile Ile Tyr Cys Thr Gly Ala Asn Ser Pro Tyr Leu Pro
325 330 335

Glu Thr Asn Leu Ala Ala Leu Pro Leu Arg Gln Ile Arg Gly Gln Thr
340 345 350

Gly Leu Thr Pro Ser Thr Pro Phe Ser Glu Gln Leu Arg Cys Ala Val
355 360 365

Ser Gly Glu Ser Tyr Ile Ser Pro Ser Trp His Gly Leu His Cys Tyr
370 375 380

Gly Ala Ser Phe Ile Pro Asn Ser Ser His Thr Gly Trp Asn Glu Ala
385 390 395 400

Glu Glu Ala Ser Asn Arg Gln Ala Leu Ala His Leu Asn Pro Ala Leu
405 410 415

Ser Glu Ser Leu Phe Ala Ala Asn Pro Asn Pro Gln Lys His Gln Gly
420 425 430

His Ala Ala Ile Arg Cys Asp Ser Pro Asp His Leu Pro Leu Val Gly
435 440 445

Ala Leu Gly Asp Ile Ala Ala Met Arg Gln Thr Tyr Thr Lys Leu Ala
450 455 460

Leu Asp Lys Asn Tyr Arg Ile Asp Thr Pro Cys Pro Tyr Leu Pro Asn
465 470 475 480

Ala Tyr Val Asn Thr Ala His Gly Thr Arg Gly Leu Ala Thr Ala Pro
485 490 495

Ile Cys Ala Ala Xaa Xaa Ala Ala Gln Ile Xaa Gly Leu Pro His Pro
500 505 510

Phe Xaa Gln Arg Leu Arg His Ala Leu His Pro Asn Arg Thr Ile Ile
515 520 525

Arg Ala Ile Val Arg Arg Lys Asp Leu Thr Pro
530 535

<210> 737

<211> 1620

<212> DNA

<213> Neisseria meningitidis

<400> 737

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caaaccgac aagatgcttc ggacgcggaa tgccgtctga agcaccgtt ggatcaggca 180
accagtgcc tccagttcga cagcatcaac ctgattgaac acatcctgcc cgatgtccgc 240
ttctggctgg ttcccccttc acgcacccgc cgcctgcacg aacacttcca ccacatttcc 300
tggcagaccc aagccatccc gcaaaccgaa agtaagcccg acaaaccctg gtttgcactt 360
ccacaaacat ccgaacggca aaaaccggaa cacatcctcg ttatcggagc gggcatatcc 420
ggcgccgcaaa cggcccacgc ctttagcatca tacggcattt cggtaaccgtt attgaaagcc 480
cggaaaaggcc cccaaagccgc cagcggcaac cgccaaaggcc tgctctacgc caaatctcg 540
ccgcacgaca ccgaacaaac cgaactgctg cttggccgct acggctacac caaacgcctg 600
ctcggacata tcctggccga atccgaaacc tggggcggca acggcatcat ccacctcaat 660
tacagccgca ccgaacaaca acgcaatcac gaattgggtt tgcaaaaaca ccataaccac 720
ctctaccgca gcatcacgca ggcagaagcc gaaaaaatcg cggcatccc tctgaacacg 780
ccctacgccc aaccattatg cggactgttt tggcagtacg gctgtatggct caatcctccc 840
acattcgtcc ggcgcctcct cagccatccc ctcattggac tacacgaaga cacaccgtt 900
accgacattt cccacgacgg gggaaaagtgg attgcaagca cgccaaacgg cacatttacc 960
gccacacaca tcatctactg caccgggtgcg aacagccccct acctaccggaa aaccaacctc 1020
gccacccctgc ccctcaggca aatacgcggaa caaaccggcc tcacaccgtc caccgggtt 1080
tccgaacaac tgcgttgcgc cgtttcagggc gaaagctaca tcagccctgc gtggcacgg 1140
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gaagaaggct caaaccggca agcattggca caccttaacc cccgccttc cgaatcattt 1260
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gcctacgcca acaccggcca cggcacacgc gggcttgcca cccgccttgc 1500
gccgttgcag ccgaaatcct aggcttgccc catccctct caaaacgcct gcgcacgc 1560
ctacacccca accgcgcctt catccgcgcc atcgatcagaa ggaaggatct aaccccttaa 1620

<210> 738

<211> 539

<212> PRT

<213> Neisseria meningitidis

<400> 738

Met Asp Asn Leu Ala Trp Asn Gly Ile Pro Asp Ile Arg Thr Leu Asp
1 5 10 15

Gln Thr Ile Arg Lys His Ala His Pro Leu Asn Leu Ile Val Cys Leu
20 25 30

Pro Asp Asn Gln Ile Pro Asn Phe Gln Thr Ala Gln Asp Ala Ser Asp
35 40 45

Ala Glu Cys Arg Leu Lys His Arg Leu Asp Gln Ala Thr Gln Cys Leu
50 55 60

Gln Phe Asp Ser Ile Asn Leu Ile Glu His Ile Leu Pro Asp Val Arg
65 70 75 80

Phe Trp Leu Val Pro Pro Ser Arg Thr Arg Arg Leu His Glu His Phe
85 90 95

His His Ile Ser Trp Gln Thr Glu Ala Ile Pro Gln Thr Glu Ser Lys
100 105 110

Pro Asp Lys Pro Trp Phe Ala Leu Pro Gln Thr Ser Glu Arg Gln Lys
115 120 125

Pro Glu His Ile Leu Val Ile Gly Ala Gly Ile Ser Gly Ala Ala Thr
130 135 140

Ala His Ala Leu Ala Ser Tyr Gly Ile Ser Val Thr Val Leu Glu Ala
145 150 155 160

Arg Lys Ala Ala Gln Ala Ala Ser Gly Asn Arg Gln Gly Leu Leu Tyr
165 170 175

Ala Lys Ile Ser Pro His Asp Thr Glu Gln Thr Glu Leu Leu Ala
180 185 190

Gly Tyr Gly Tyr Thr Lys Arg Leu Leu Gly His Ile Leu Pro Glu Ser
195 200 205

Glu Thr Trp Gly Gly Asn Gly Ile Ile His Leu Asn Tyr Ser Arg Thr
210 215 220

Glu Gln Gln Arg Asn His Glu Leu Gly Leu Gln Lys His His Asn His
225 230 235 240

Leu Tyr Arg Ser Ile Thr Gln Ala Glu Ala Glu Lys Ile Ala Gly Ile
245 250 255

Pro Leu Asn Thr Pro Tyr Ala Glu Pro Leu Cys Gly Leu Phe Trp Gln
260 265 270

Tyr Gly Val Trp Leu Asn Pro Pro Thr Phe Val Arg Ala Leu Leu Ser
275 280 285

His Pro Leu Ile Gly Leu His Glu Asp Thr Pro Leu Thr Asp Ile Ser
290 295 300

His Asp Gly Glu Lys Trp Ile Ala Ser Thr Pro Asn Gly Thr Phe Thr
 305 310 315 320
 Ala Thr His Ile Ile Tyr Cys Thr Gly Ala Asn Ser Pro Tyr Leu Pro
 325 330 335
 Glu Thr Asn Leu Ala Thr Leu Pro Leu Arg Gln Ile Arg Gly Gln Thr
 340 345 350
 Gly Leu Thr Pro Ser Thr Pro Phe Ser Glu Gln Leu Arg Cys Ala Val
 355 360 365
 Ser Gly Glu Ser Tyr Ile Ser Pro Ser Trp His Gly Leu His Cys Tyr
 370 375 380
 Gly Ala Ser Phe Ile Pro Asn Ser Ser His Thr Gly Trp Asn Glu Ala
 385 390 395 400
 Glu Glu Ala Ser Asn Arg Gln Ala Leu Ala His Leu Asn Pro Ala Leu
 405 410 415
 Ser Glu Ser Leu Phe Ala Ala Asn Pro Asn Pro Gln Lys His Gln Gly
 420 425 430
 His Ala Ala Ile Arg Cys Asp Ser Pro Asp His Leu Pro Leu Val Gly
 435 440 445
 Ala Leu Gly Asp Ile Ala Ala Met Gln Gln Thr Tyr Ala Lys Leu Ala
 450 455 460
 Leu Asp Lys Asn Tyr Arg Ile Asp Ala Pro Cys Pro Tyr Leu Pro Asn
 465 470 475 480
 Ala Tyr Ala Asn Thr Ala His Gly Thr Arg Gly Leu Ala Thr Ala Pro
 485 490 495
 Ile Cys Ala Ala Ala Val Ala Ala Glu Ile Leu Gly Leu Pro His Pro
 500 505 510
 Leu Ser Lys Arg Leu Arg His Ala Leu His Pro Asn Arg Ala Ile Ile
 515 520 525
 Arg Ala Ile Val Arg Arg Lys Asp Leu Thr Pro
 530 535

<210> 739

<211> 606

<212> DNA

<213> Neisseria gonorrhoeae

<400> 739

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 gatcaagcca accaaaggac cacattagc ggcaatgtca tcatacgaca gggtacgctc 180
 aacatttccg cctcgtgtgt caacgtcaca cgcggcaggc aaaggcggcg aatccgtgag 240
 ggcggaaaggt tcgccccgtcc gcttcagcca aacgttggac gggggcaaag ggacgggtcg 300

cggtcaggca aacaacgtta cctattcctc cgccaggaagc actgtcggtc tgaccggcaa 360
tgccaaagtg cagcgcggcg ggcacgttgc cgaagggtgcg gtcattacct acaacaccaa 420
aaccgaagtc tataccatca acggcagcac gaaatcggtt gcgaaatccg cttccaaaac 480
cgccagggtc agcgtcgta tccagccttc aagcacacaa aaaaccgaat aaccggatg 540
ccgtctgaaa cgaaaaacgca gttcagacgg catttgcga ccgaaatgcc gagaagagat 600
tattga 606

<210> 740

<211> 201

<212> PRT

<213> Neisseria gonorrhoeae

<400> 740

Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Val Ile Phe Ala
1 5 10 15

Thr Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Arg Pro Ile Gln
20 25 30

Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Arg Thr Thr
35 40 45

Phe Ser Gly Asn Val Ile Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
50 55 60

Ser Cys Val Asn Val Thr Arg Gly Arg Gln Arg Arg Arg Ile Arg Glu
65 70 75 80

Gly Gly Arg Phe Ala Arg Pro Leu Gln Pro Asn Val Gly Arg Gly Gln
85 90 95

Arg Asp Gly Ala Arg Ser Gly Lys Gln Arg Tyr Leu Phe Leu Arg Arg
100 105 110

Lys His Cys Arg Ser Asp Arg Gln Cys Gln Ser Ala Ala Arg Arg Arg
115 120 125

Arg Cys Arg Arg Cys Gly His Tyr Leu Gln His Gln Asn Arg Ser Leu
130 135 140

Tyr His Gln Arg Gln His Glu Ile Gly Cys Glu Ile Arg Phe Gln Asn
145 150 155 160

Arg Gln Gly Gln Arg Arg His Pro Ala Phe Lys His Thr Lys Asn Arg
165 170 175

Ile Thr Pro Met Pro Ser Glu Thr Glu Thr Gln Phe Arg Arg His Leu
180 185 190

Pro Thr Glu Met Pro Arg Arg Asp Tyr
195 200

<210> 741

<211> 455

<212> DNA

<213> Neisseria meningitidis

<400> 741

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gatcaagcca accaaagcac cacattcagc ggaaacgtcg tcatcagaca gggtagcgtc 180
aatatttccg ccgcccgt caatgttaca cgcggcggca aaggcggcga atccgtgagg 240
gcggaagggtt cgccagtccg cttagccag acattggacg gcggcaaagg cacggtgcc 300
ggacaggcaa acaacgttgc ttattcatct gcaggcagca ccgtagtc tt aaccggtaat 360
gccaaggtaac agcgcggcgg cgtatgtcgcc gaaggtgcgg tgattacata caacaccaaa 420
accgaagtct ataccatcag cggcagcaca aaatt 455

<210> 742

<211> 151

<212> PRT

<213> Neisseria meningitidis

<400> 742

Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Ala Phe Phe Ser
1 5 10 15

Ala Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Gln Pro Ile Gln
20 25 30

Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Ser Thr Thr
35 40 45

Phe Ser Gly Asn Val Val Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
50 55 60

Ala Arg Val Asn Val Thr Arg Gly Arg Gln Arg Arg Arg Ile Arg Glu
65 70 75 80

Gly Gly Arg Phe Ala Ser Pro Leu Gln Pro Asp Ile Gly Arg Arg Gln
85 90 95

Arg His Gly Ala Arg Thr Gly Lys Gln Arg Cys Leu Phe Ile Cys Arg
100 105 110

Gln His Arg Ser Leu Asn Arg Cys Gln Ser Thr Ala Arg Arg Arg Cys
115 120 125

Arg Arg Arg Cys Gly Asp Tyr Ile Gln His Gln Asn Arg Ser Leu Tyr
130 135 140

His Gln Arg Gln His Lys Ile
145 150

<210> 743

<211> 605

<212> DNA

<213> Neisseria meningitidis

<400> 743

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gatcaagcca accaaagcac cacattcagc ggaaacgtcg tcatacagaca gggtagcgtc 180
aatatttccg ccgccccgt caatgttaca cgccggcga aaggcggcga atccgtgagg 240
gcggaagggtt cgccagtccg cttcagccag acattggacg gcggcaaagg cacgtgcgc 300
ggacaggcaa acaacgttgc ttattcatct gcaggcagca ccgttagtctt aaccggtaat 360
gccaaagtac agcgcggcgg cgtatgtcgcc gaaggtgcgg tgattacata caacaccaaa 420
accgaagtct ataccatcag cgccagcaca aaatccggcg caaaatccgc ttccaaatcc 480
ggcagggtca gcgtcggttat ccagccttc agtacgaaaa aatccgaata atccaaatgc 540
cgctctgaaac ataaacctgg ttccggacggc atttggcgc cggaaatattt aagagatatt 600
tatga 605

<210> 744

<211> 199

<212> PRT

<213> Neisseria meningitidis

<400> 744

Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Ala Phe Phe Ser
1 5 10 15

Ala Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Gln Pro Ile Gln
20 25 30

Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Ser Thr Thr
35 40 45

Phe Ser Gly Asn Val Val Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
50 55 60

Ala Arg Val Asn Val Thr Arg Gly Xaa Gln Arg Arg Arg Ile Arg Glu
65 70 75 80

Gly Gly Arg Phe Ala Ser Pro Leu Gln Pro Asp Ile Gly Arg Arg Gln
85 90 95

Arg His Gly Ala Arg Thr Gly Lys Gln Arg Cys Leu Phe Ile Cys Arg
100 105 110

Gln His Arg Ser Leu Asn Arg Cys Gln Ser Thr Ala Arg Arg Arg Cys
115 120 125

Arg Arg Arg Cys Gly Asp Tyr Ile Gln His Gln Asn Arg Ser Leu Tyr
130 135 140

His Gln Arg Gln His Lys Ile Arg Arg Lys Ile Arg Phe Gln Ile Arg
145 150 155 160

Gln Gly Gln Arg Arg Tyr Pro Ala Phe Glu Tyr Ala Lys Ile Arg Ile
165 170 175

Ile Pro Met Pro Ser Glu Thr Thr Trp Phe Gly Arg His Leu Pro Thr
180 185 190

Glu Ile Leu Lys Arg Tyr Leu
195

<210> 745
<211> 531
<212> DNA
<213> Neisseria gonorrhoeae

<400> 745
atgatacaaa agatatgtaa gctattgtt ttaattgtaa ttttgcaac ttctcccgct 60
tttgccttc aaagcgacag cagacggccc atccaaatcg aagccgacca aggttcgctc 120
gatcaagcca accaaagtac cacathtagc ggcaatgtca tcattcagaca gggtagcgtc 180
aacatttccg cctcgccgt caacgtcaca cgccggca aaggcggcga atccgtgagg 240
gccaagggtt cgcccgccg cttcagccaa acgttggacg gggcaaagg gacggtgcgc 300
ggtcaggcaa acaacgttac ctattcctcc gcaggaagca ccgtcggtt gaccggcaat 360
gccaaagtgc agcgcggcgg cgacgttgcg gaaggtgcgg tcattaccta caacaccaaa 420
accgaagtct ataccatcaa cggcagcacg aaatcgggt cgaaatccgc ttccaaaacc 480
ggcagggtca gcgtcgcat ccagcattca agcacacaaa aaaccgaata a 531

<210> 746
<211> 176
<212> PRT
<213> Neisseria gonorrhoeae

<400> 746
Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Val Ile Phe Ala
1 5 10 15
Thr Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Arg Pro Ile Gln
20 25 30
Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Ser Thr Thr
35 40 45
Phe Ser Gly Asn Val Ile Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
50 55 60
Ser Arg Val Asn Val Thr Arg Gly Gly Lys Gly Glu Ser Val Arg
65 70 75 80
Ala Glu Gly Ser Pro Val Arg Phe Ser Gln Thr Leu Asp Gly Gly Lys
85 90 95
Gly Thr Val Arg Gly Gln Ala Asn Asn Val Thr Tyr Ser Ser Ala Gly
100 105 110
Ser Thr Val Val Leu Thr Gly Asn Ala Lys Val Gln Arg Gly Gly Asp
115 120 125
Val Ala Glu Gly Ala Val Ile Thr Tyr Asn Thr Lys Thr Glu Val Tyr
130 135 140
Thr Ile Asn Gly Ser Thr Lys Ser Gly Ala Lys Ser Ala Ser Lys Thr
145 150 155 160
Gly Arg Val Ser Val Val Ile Gln Pro Ser Ser Thr Gln Lys Thr Glu
165 170 175

<210> 747
<211> 531
<212> DNA
<213> Neisseria meningitidis

<400> 747
atgatacaaa agatatgtaa gctatttggc ttaatagcat tttttcgcc gtccccgc 60
tttgccttc aaagcgacag caggcagcct attcaaggatg aggccgacca aggttcgctc 120
gatcaagcca accaaagcac cacattcagc ggaaacgtcg tcatacgaca gggtacgctc 180
aatatttccg ccgcccgcgt caatgttaca cgcggcggca aaggcggcga atccgtgagg 240
gcggaagggtt cgccagtccg cttcagccag acattggacg gcggcaaagg cacgtgcgc 300
ggacaggcaa acaacgttgc ttattcatct gcagggcagca cctgtactt aaccggtaat 360
gccaaagtac agcgcggcgg cgatgtgcgc gaaggtgcgg tgattacata caacaccaaa 420
accgaagtct ataccatcag cggcagcaca aaatccggcg caaaatccgc ttccaaatcc 480
ggcagggtca gcgtcgttat ccagccttc agtacgcaaa aatccgata a 531

<210> 748
<211> 176
<212> PRT
<213> Neisseria meningitidis

<400> 748
Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Ala Phe Phe Ser
1 5 10 15

Ala Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Gln Pro Ile Gln
20 25 30

Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Ser Thr Thr
35 40 45

Phe Ser Gly Asn Val Val Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
50 55 60

Ala Arg Val Asn Val Thr Arg Gly Gly Lys Gly Glu Ser Val Arg
65 70 75 80

Ala Glu Gly Ser Pro Val Arg Phe Ser Gln Thr Leu Asp Gly Gly Lys
85 90 95

Gly Thr Val Arg Gly Gln Ala Asn Asn Val Ala Tyr Ser Ser Ala Gly
100 105 110

Ser Thr Val Val Leu Thr Gly Asn Ala Lys Val Gln Arg Gly Gly Asp
115 120 125

Val Ala Glu Gly Ala Val Ile Thr Tyr Asn Thr Lys Thr Glu Val Tyr
130 135 140

Thr Ile Ser Gly Ser Thr Lys Ser Gly Ala Lys Ser Ala Ser Lys Ser
145 150 155 160

Gly Arg Val Ser Val Val Ile Gln Pro Ser Ser Thr Gln Lys Ser Glu
165 170 175

<210> 749

<211> 531

<212> DNA

<213> Neisseria meningitidis

<400> 749

atgatacaaa agatatgtaa gctatttggc ttaatagcat tttttcggc gtcccccgc 60
tttgcccttc aaagcgacag caggcagcc attcagattg aggccgacca aggttcgctc 120

gatcaaggcca accaaagcac cacattcagc ggaaacgtcg tcatacgaca gggtaacgctc 180
aatatttccg ccgccccgcgt caatgttaca cgccggcggca aaggcggcga atccgtgagg 240
gcggaaagggtt cgccagtccg cttcagccag acattggacg gcggcaaagg cacgtgcgc 300
ggacaggcaa acaacgttgc ttattcatct gcaggcagca ccgtagtctt aaccggtaat 360
gccaaagtac agcgcggcgg cgatgtcgcc gaaggtgcgg tgattacata caacaccaaa 420
accgaagtct ataccatcg cggcagcaca aaatccggc caaaaatccgc ttccaaatcc 480
ggcagggtca gcgtcgatat ccagcattcg agtacgcaaa aatccgaata a 531

<210> 750

<211> 176

<212> PRT

<213> Neisseria meningitidis

<400> 750

Met Ile Gln Lys Ile Cys Lys Leu Phe Val Leu Ile Ala Phe Phe Ser
1 5 10 15

Ala Ser Pro Ala Phe Ala Leu Gln Ser Asp Ser Arg Gln Pro Ile Gln
20 25 30

Ile Glu Ala Asp Gln Gly Ser Leu Asp Gln Ala Asn Gln Ser Thr Thr
35 40 45

Phe Ser Gly Asn Val Val Ile Arg Gln Gly Thr Leu Asn Ile Ser Ala
50 55 60

Ala Arg Val Asn Val Thr Arg Gly Gly Lys Gly Glu Ser Val Arg
65 70 75 80

Ala Glu Gly Ser Pro Val Arg Phe Ser Gln Thr Leu Asp Gly Gly Lys
85 90 95

Gly Thr Val Arg Gly Gln Ala Asn Asn Val Ala Tyr Ser Ser Ala Gly.
100 105 110

Ser Thr Val Val Leu Thr Gly Asn Ala Lys Val Gln Arg Gly Gly Asp
115 120 125

Val Ala Glu Gly Ala Val Ile Thr Tyr Asn Thr Lys Thr Glu Val Tyr

130

135

140

Thr Ile Ser Gly Ser Thr Lys Ser Gly Ala Lys Ser Ala Ser Lys Ser
 145 150 155 160

Gly Arg Val Ser Val Val Ile Gln Pro Ser Ser Thr Gln Lys Ser Glu
165 170 175

210 751

<211> 582

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 751

atgaaagtta	gatggcggta	cggattgcg	ttcccatgta	tattggcggt	tgccttggc	60
agcctgtcgg	catggttggg	ccgtatcagc	gaagtcgaaa	tcgaggaagt	caggctcaat	120
cccgacgaac	ctcaatacac	aatggacggc	ttggacggaa	ggcggttga	cgaacagggg	180
tacttggaaag	aacattttag	cgcgaaaggt	gcgaaacagt	ttcccgaaaa	cagcgacatc	240
catttgatt	cggcgatct	cgttgttcc	caagaaggca	ggctgttgc	cgaagtccgc	300
agcgatgaag	ccgtttacca	taccggaaac	aaacagggtc	ttttaaaaaa	caacgttgc	360
ctgaccaaaa	ccgcccacgg	caggcggcag	gccccgttaaag	tcgaaaccga	aaaactgcac	420
gtcgataaccg	aatctcaata	tgcccaaacc	gatacgccgt	tcagtttcca	atatggcg	480
tcgcacggtc	aggcggcgg	tatgacctac	aaccacaaaa	caggcatgtt	gaacttctca	540
tctaaagtga	aagccgcgat	ttatgataca	aaagatatgt	aa		582

<210> 752

<211> 193

<212> PRT

<213> Neisseria gonorrhoeae

<400> 752

Met	Lys	Val	Arg	Trp	Arg	Tyr	Gly	Ile	Ala	Phe	Pro	Leu	Ile	Leu	Ala
1				5				10				15			

Val Ala Leu Gly Ser Leu Ser Ala Trp Leu Gly Arg Ile Ser Glu Val
 20 25 30

Glu Ile Glu Glu Val Arg Leu Asn Pro Asp Glu Pro Gln Tyr Thr Met
 35 40 45

Asp Gly Leu Asp Gly Arg Arg Phe Asp Glu Gln Gly Tyr Leu Lys Glu
 50 55 60

His Leu Ser Ala Lys Gly Ala Lys Gln Phe Pro Glu Asn Ser Asp Ile
65 70 75 80

His Phe Asp Ser Pro His Leu Val Phe Phe Gln Glu Gly Arg Leu Leu
85 90 95

Tyr Glu Val Gly Ser Asp Glu Ala Val Tyr His Thr Glu Asn Lys Gln
 100 105 110

Val Leu Phe Lys Asn Asn Val Val Leu Thr Lys Thr Ala Asp Gly Arg
115 120 125

Arg Gln Ala Gly Lys Val Glu Thr Glu Lys Leu His Val Asp Thr Glu
130 135 140

Ser Gln Tyr Ala Gln Thr Asp Thr Pro Val Ser Phe Gln Tyr Gly Ala
145 150 155 160

Ser His Gly Gln Ala Gly Gly Met Thr Tyr Asn His Lys Thr Gly Met
165 170 175

Leu Asn Phe Ser Ser Lys Val Lys Ala Ala Ile Tyr Asp Thr Lys Asp
180 185 190

Met

<210> 753

<211> 521

<212> DNA

<213> Neisseria meningitidis

<400> 753

accctgtcgg catggttggg tcgtatcagc gaagtcgaga ttgaagaagt caggctcaat 60
cccgacgaac cgcaatacac aatggacagc ttggacggca ggcggtttga cgaacaggaa 120

tacttgaag aacatttgag cgCGAAGGGC gcgaaacagt ttccggaaag cagcgacatc 180
catTTTgatt cGCCGcatct cgtgttcttc caagaaggca gtttgttta cgaagtccgc 240
agcgacgaag ccgttacca taccgaaaac aaacaggttc ttttaaaaa caacgttgcg 300
ctgaccaaaa ccGCCGacgg caaacGGcag gCGGTTaaag ttgaagccga aaagctgcac 360
gtcgataaccg aatctcaata tgcccaaacc gatacgcctg cagttccaa tatggtgcat 420
cgCACGGTCA ggcGGGCGGC atgacttagc accacawwac aggcatgttg aacttctcat 480
ctaaagtcaa agccacgatt tatgatacaa aagatatgtaa 521

<210> 754

<211> 173

<212> PRT

<213> Neisseria meningitidis

<400> 754

Ser Leu Ser Ala Trp Leu Gly Arg Ile Ser Glu Val Glu Ile Glu Glu
1 5 10 15

Val Arg Leu Asn Pro Asp Glu Pro Gln Tyr Thr Met Asp Ser Leu Asp
20 25 30

Gly Arg Arg Phe Asp Glu Gln Gly Tyr Leu Lys Glu His Leu Ser Ala
35 40 45

Lys Gly Ala Lys Gln Phe Pro Glu Ser Ser Asp Ile His Phe Asp Ser
50 55 60

Pro His Leu Val Phe Phe Gln Glu Gly Arg Leu Leu Tyr Glu Val Gly
65 70 75 80

<210> 755
<211> 582
<212> DNA
<213> *Neisseria meningitidis*

<400> 755
atgaaagtta gatggcggtt cggaatttgcg ttcccatgtt tattggcggt tgccttggc 60
agcctgtcggtt catggttggg acgcatacgc gaagtcgaga ttgaagaagt caggctaat 120
cccgacaaac cgcaatacac aatggacggt ttggatggca ggcggtttga cgaacaggga 180
tacttggaaag aacatttgat ttcgaagggtt gcgaaacagt ttcccgaaag cagcgacatt 240
catttcgactt caccgcattt cgtgttcttc caagaaggca gtttgttgc cgaagtccgc 300
agcgatgtttt ccgttttacca taccggaaaac aaacagggttcc ttttttaaaaa caacgttgtt 360
ctgaccaaaaa ccgcccacgg caaacggcag gcgggttaaag ttgaagccga aaagctgcac 420
gtcgataccg aatctcaata tgccccaaacc gatacgccctg tcagtttcca atatggtgca 480
tcgcacggtc aggcgggcgg catgacttac gaccacaaaa caggcatgtt gaacttctca 540
tctaaagtta aagccacgtt ttagatataaa aagatatgtt aa 582

<210> 756
<211> 193
<212> PRT
<213> *Neisseria meningitidis*

<400> 756
Met Lys Val Arg Trp Arg Tyr Gly Ile Ala Phe Pro Leu Ile Leu Ala
1 5 10 15

Val Ala Leu Gly Ser Leu Ser Ala Trp Leu Gly Arg Ile Ser Glu Val
 20 25 30

Glu Ile Glu Glu Val Arg Leu Asn Pro Asp Glu Pro Gln Tyr Thr Met
35 40 45

Asp Gly Leu Asp Gly Arg Arg Phe Asp Glu Gln Gly Tyr Leu Lys Glu
50 55 60

His Leu Ser Ser Lys Gly Ala Lys Gln Phe Pro Glu Ser Ser Asp Ile

65	70	75	80
His Phe Asp Ser Pro His Leu Val Phe Phe Gln Glu Gly Arg Leu Leu			
85		90	95
Tyr Glu Val Gly Ser Asp Glu Ala Val Tyr His Thr Glu Asn Lys Gln			
100		105	110
Val Leu Phe Lys Asn Asn Val Val Leu Thr Lys Thr Ala Asp Gly Lys			
115		120	125
Arg Gln Ala Gly Lys Val Glu Ala Glu Lys Leu His Val Asp Thr Glu			
130		135	140
Ser Gln Tyr Ala Gln Thr Asp Thr Pro Val Ser Phe Gln Tyr Gly Ala			
145		150	155
Ser His Gly Gln Ala Gly Gly Met Thr Tyr Asp His Lys Thr Gly Met			
165		170	175
Leu Asn Phe Ser Ser Lys Val Lys Ala Thr Ile Tyr Asp Thr Lys Asp			
180		185	190

Met

<210> 757
<211> 468
<212> DNA
<213> Neisseria gonorrhoeae

<400> 757
atgatatatcgaa tttcgagctc ggtacccagc gacgaaatca ccggccatcat ccccgcaactc 60
aaacgc当地 acattaccct cgtctgc当地 accgccccgc当地 cc当地 attcaac catggc当地 gc当地 120
catgcc当地 ata tccacatcac cgc当地 atcggtt tc当地 caagaag cctgccc当地 ggggctt当地 gcc 180
ccgacc当地 acca gc当地 accaccgc当地 cgtt当地 atggct tt当地 gggc当地 acg当地 tggc当地 240
cgc当地 cccgc当地 cg当地 ttcaegcc当地 cgacgacttc gc当地 ttgatcc accc当地 tggc当地 cagc当地 ctggc当地 300
aaacgc当地 ctgc当地 ttttgc当地 cgt tgcc当地 acatt atgc当地 caaaag gc当地 gggc当地 cctgc当地 360
cgactc当地 tggc当地 cgc当地 ccttgaa aggagccatc gtc当地 agcatga gc当地 gagaaagg tttggc当地 catg 420
tggc当地 gggaa cgac当地 gggc当地 aaggctgtct gaaaggc当地 cttactga 468

<210> 758
<211> 155
<212> PRT
<213> Neisseria gonorrhoeae

<400> 758
Met Ile Ser Ile Ser Ser Ser Val Pro Ser Asp Glu Ile Thr Ala Ile
1 5 10 15
Ile Pro Ala Leu Lys Arg Lys Asp Ile Thr Leu Val Cys Ile Thr Ala
20 25 30
Arg Pro Asp Ser Thr Met Ala Arg His Ala Asp Ile His Ile Thr Ala

35

40

45

Ser Val Ser Gln Glu Ala Cys Pro Leu Gly Leu Ala Pro Thr Thr Ser
50 55 60

Thr Thr Ala Val Met Ala Leu Gly Asp Ala Leu Ala Val Val Leu Leu
65 70 75 80

Arg Ala Arg Ala Phe Thr Pro Asp Asp Phe Ala Leu Ile His Pro Ala
85 90 95

Gly Ser Leu Gly Lys Arg Leu Leu Leu Arg Val Ala Asp Ile Met His
100 105 110

Lys Gly Gly Gly Leu Pro Ala Val Arg Leu Gly Thr Pro Leu Lys Gly
115 120 125

Ala Ile Val Ser Met Ser Glu Lys Gly Leu Gly Met Trp Ala Gly Thr
130 135 140

Asp Gly Gln Arg Leu Ser Glu Arg Pro Phe Tyr
145 150 155

<210> 759

<211> 981

<212> DNA

<213> Neisseria meningitidis

<400> 759

atggcaatgg cagaaaacgg aaaatatctc gactggcac gcgaagtgtt gcacgccc 60
gccaaggct tgcgcgaaat tgcagcgaa ttgsacaaaa acttcgtcct tgcggcagac 120
gcgttgtgc actgcaaggg cagggtcgat atcacggca tggtaagtc gggacatatac 180

ggcgcaaaa tggcgcaac tatggcctcg accggcacgc ctgcgtttt cgtccaccct 240
gcggaagcgg cacacggcga tttgggtatg attgtggaca rcgacgtggt cgtcgcgatt 300
tccaattccg gcgaaaagcga cggaaatcgcc gccatcatcc ccgcactcaa acgcaaagac 360
atcacgcttg tctgcacatcac cgcccccc gattcaacca tggcgccca tgccgacatc 420
cacatcaacgg cgtcggttc caaagaagcc tgcccgctgg gggttgcccc gaccaccagc 480
accacccggc tcatggctt gggcgatgcg ttggcggtcg tcctgctgcg cgacacgcgcg 540
ttcacgcccc acgatttcgc cttgagccat cctgccggca gcctcgccaa acgcctactt 600
ttgcgcgttg ccgacattat gcacaaaggc ggcggcctgc ctgcccgtccg actcggcacg 660
cccttgcggaa aagccatcgat cagcatgagt gaaaaaggc tggcatgtt ggcgttaacg 720
gacgggcaag gccgtctgaa aggcgatattc accgacggcg atttgccgcg cctgtttcaa 780
aatatgcgaca attttaccgg tctttcgata gacgaagtca tgcatacgc tccctaaaacc 840
atctccgccc aacgtctcgc caccgaagcc ctgaaagtca tgcaggcaaa ccatgtgaac 900
gggcttctgg ttaccgatgc agatggcgtg ctgatggcg cgctgaatat gcacgacactg 960
ctggcgacggc ggttgtata g 981

<210> 760

<211> 326

<212> PRT

<213> Neisseria meningitidis

<400> 760

Met Ala Met Ala Glu Asn Gly Lys Tyr Leu Asp Trp Ala Arg Glu Val

1 5 10 15

Leu His Ala Glu Ala Glu Gly Leu Arg Glu Ile Ala Ala Glu Leu Xaa
20 25 30

Lys Asn Phe Val Leu Ala Ala Asp Ala Leu Leu His Cys Lys Gly Arg
35 40 45

Val Val Ile Thr Gly Met Val Lys Ser Gly His Ile Gly Arg Lys Met
50 55 60

Ala Ala Thr Met Ala Ser Thr Gly Thr Pro Ala Phe Phe Val His Pro
65 70 75 80

Ala Glu Ala Ala His Gly Asp Leu Gly Met Ile Val Asp Xaa Asp Val
85 90 95

Val Val Ala Ile Ser Asn Ser Gly Glu Ser Asp Glu Ile Ala Ala Ile
100 105 110

Ile Pro Ala Leu Lys Arg Lys Asp Ile Thr Leu Val Cys Ile Thr Ala
115 120 125

Arg Pro Asp Ser Thr Met Ala Arg His Ala Asp Ile His Ile Thr Ala
130 135 140

Ser Val Ser Lys Glu Ala Cys Pro Leu Gly Leu Ala Pro Thr Thr Ser
145 150 155 160

Thr Thr Ala Val Met Ala Leu Gly Asp Ala Leu Ala Val Val Leu Leu
165 170 175

Arg Ala Arg Ala Phe Thr Pro Asp Asp Phe Ala Leu Ser His Pro Ala
180 185 190

Gly Ser Leu Gly Lys Arg Leu Leu Leu Arg Val Ala Asp Ile Met His
195 200 205

Lys Gly Gly Leu Pro Ala Val Arg Leu Gly Thr Pro Leu Lys Glu
210 215 220

Ala Ile Val Ser Met Ser Glu Lys Gly Leu Gly Met Leu Ala Val Thr
225 230 235 240

Asp Gly Gln Gly Arg Leu Lys Gly Val Phe Thr Asp Gly Asp Leu Arg
245 250 255

Arg Leu Phe Gln Glu Cys Asp Asn Phe Thr Gly Leu Ser Ile Asp Glu
260 265 270

Val Met His Thr His Pro Lys Thr Ile Ser Ala Glu Arg Leu Ala Thr
275 280 285

Glu Ala Leu Lys Val Met Gln Ala Asn His Val Asn Gly Leu Leu Val
290 295 300

Thr Asp Ala Asp Gly Val Leu Ile Gly Ala Leu Asn Met His Asp Leu

305 310 315 320

Leu Ala Ala Arg Ile Val
325

<210> 761
<211> 981
<212> DNA
<213> Neisseria meningitidis

<400> 761
atggcgatgg caggaaacga aaaatatctt gattggcac gcgaagtgtt gcacaccgaa 60
gcggaaggct tgcgcgaaat tgcggcggat ttggacgaaa acttcgcctt tgccggac 120
gcgttgttgc actgcaaagg cagggtcgtt atcacggca tggcaagtc gggacatatac 180
gggcgcaaaa tggcgcaac catggcctcg accggcacgc ccgcgtttt cgtccaccct 240
gcggaagcgg cacacggcga tttgggcatg attgtggaca acgacgtgtt cgtcgcatt 300
tccaaattccg gtgaaagcga cgaatcgcc gccatcatcc ccgcgtctcaa acgcaaagat 360
atcacgcttg tctgcatcac cgcggcccc gattcaacca tggcgccca tgccgacatc 420
cacatcacgg cgtcggttcc caaagaagcc tgcccgtgg ggcttgcctt gaccaccagc 480
accaccgccc ttatggctt gggcgatgcg ttggcggttgc tcctgctgcg cgccgcgcg 540
ttcacgccc acgacttcgc cttagccac cctgcggca gcctcggcaa acgcctactt 600
ttgcgcgttg ccgacattat gcacaaaggc ggcggctgc ctgcccgtccg actcggcacg 660

cccttgaag aagccatcgat cagcatgagt gaaaaaggc tggcatgtt ggcgttaacg 720
gacgggcaag gccgtctgaa aggcgtattt accgacggcg atttgcgcgg cctgtttcaa 780
gaatgcgaca attttaccgg tctttcgata gacgaagtca tgcatacgc tcctaaaacc 840
atctccgccc aacgtctcgc caccgaagcc ctgaaagtca tgcaggcaaa ccatgtgaac 900
gggcttctgg ttaccgatgc agatggcgatgc ctgatggcg cgctgaatat gcacgacattt 960
ttggcgccgc ggattgtata g 981

<210> 762
<211> 326
<212> PRT
<213> Neisseria meningitidis

<400> 762
Met Ala Met Ala Gly Asn Glu Lys Tyr Leu Asp Trp Ala Arg Glu Val
1 5 10 15

Leu His Thr Glu Ala Glu Gly Leu Arg Glu Ile Ala Ala Asp Leu Asp
20 25 30

Glu Asn Phe Ala Leu Ala Ala Asp Ala Leu Leu His Cys Lys Gly Arg
35 40 45

Val Val Ile Thr Gly Met Gly Lys Ser Gly His Ile Gly Arg Lys Met
50 55 60

Ala Ala Thr Met Ala Ser Thr Gly Thr Pro Ala Phe Phe Val His Pro
65 70 75 80

Ala Glu Ala Ala His Gly Asp Leu Gly Met Ile Val Asp Asn Asp Val
85 90 95

Val Val Ala Ile Ser Asn Ser Gly Glu Ser Asp Glu Ile Ala Ala Ile

100	105	110
Ile Pro Ala Leu Lys Arg Lys Asp Ile Thr Leu Val Cys Ile Thr Ala		
115	120	125
Arg Pro Asp Ser Thr Met Ala Arg His Ala Asp Ile His Ile Thr Ala		
130	135	140
Ser Val Ser Lys Glu Ala Cys Pro Leu Gly Leu Ala Pro Thr Thr Ser		
145	150	155
Thr Thr Ala Val Met Ala Leu Gly Asp Ala Leu Ala Val Val Leu Leu		
165	170	175
Arg Ala Arg Ala Phe Thr Pro Asp Asp Phe Ala Leu Ser His Pro Ala		
180	185	190
Gly Ser Leu Gly Lys Arg Leu Leu Leu Arg Val Ala Asp Ile Met His		
195	200	205
Lys Gly Gly Gly Leu Pro Ala Val Arg Leu Gly Thr Pro Leu Lys Glu		
210	215	220
Ala Ile Val Ser Met Ser Glu Lys Gly Leu Gly Met Leu Ala Val Thr		
225	230	235
Asp Gly Gln Gly Arg Leu Lys Gly Val Phe Thr Asp Gly Asp Leu Arg		
245	250	255
Arg Leu Phe Gln Glu Cys Asp Asn Phe Thr Gly Leu Ser Ile Asp Glu		
260	265	270
Val Met His Thr His Pro Lys Thr Ile Ser Ala Glu Arg Leu Ala Thr		
275	280	285
Glu Ala Leu Lys Val Met Gln Ala Asn His Val Asn Gly Leu Leu Val		
290	295	300
Thr Asp Ala Asp Gly Val Leu Ile Gly Ala Leu Asn Met His Asp Leu		
305	310	315
Leu Ala Ala Arg Ile Val		
325		

<210> 763
 <211> 681
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 763
 atggcggatg acggtttgtt gcggcaactg tccaaaaaac ccagccaaag tgctctttc 60
 ctgccatttg acccattcgt tttcgaggtt ttggactgcc ttttggcat cggccccgc 120
 ttgaaacaat gtttcaagca aatccggca acgcgccacc cattcgccga ccgtcgagg 180
 ttggccggcat atccgggcaa tatccgacag ggttcgagg aaggcggcaa aacgtccgaa 240
 catggcggtt tgattcacgt cggcatacca cgcgctgaca tcctgcccaca tcgggttgcc 300
 gcctcgggc agcatccagc ccaatatcat acggtctgcc gcctgcttcc aggtaaacag 360

ctgatccgtg cgcggcgca tttctccgtc caatccccaa tggacgttca aatcggaac 420
catatcggtc aaaagcgca aatcgcccc ggtcagtccg aaacggcgca acacgggcgc 480
ggtttccaaa agcgcgagca ctttgcgcac ttcaaaaacgg ctttccagca agtcggacac 540
gcactccaac gcataaaaaa acgggttgcgg gcggctgatt ttcacgtccg aaacggaata 600
cggaatgcc tgcgcgcgg gttgcgcctg tccgaacacg gcttccataa aaggcgtata 660
gggttcgata ttcgggtta a 681

<210> 764

<211> 226

<212> PRT

<213> Neisseria gonorrhoeae

<400> 764

Met Ala Asp Asp Gly Leu Leu Arg Gln Leu Ser Glu Lys Pro Ser Gln
1 5 10 15

Ser Ala Leu Phe Leu Pro Phe Asp Pro Phe Val Phe Glu Val Leu Asp
20 25 30

Cys Leu Leu Val Ile Gly Pro Gly Leu Lys Gln Cys Phe Lys Gln Ile
35 40 45

Pro Ala Thr Arg His Pro Phe Ala Asp Arg Arg Arg Leu Pro Pro Tyr
50 55 60

Pro Gly Asn Ile Arg Gln Gly Phe Glu Glu Gly Lys Thr Ser Glu
65 70 75 80

His Gly Gly Leu Ile His Val Gly Ile Pro Arg Ala Asp Ile Leu Pro
85 90 95

His Arg Val Ala Ala Phe Gly Gln His Pro Ala Gln Tyr His Thr Val
100 105 110

Cys Arg Leu Leu Pro Gly Lys Gln Leu Ile Arg Ala Ala Ala His Phe
115 120 125

Ser Val Gln Ser Pro Met Asp Val Gln Ile Gly Asn His Ile Val Gln
130 135 140

Lys Arg Gln Ile Val Pro Gly Gln Ser Glu Thr Ala Gln His Gly Arg
145 150 155 160

Gly Phe Gln Lys Arg Glu His Phe Ala Asp Phe Lys Thr Ala Phe Gln
165 170 175

Gln Val Gly His Ala Leu Gln Arg Ile Lys Lys Arg Leu Pro Ala Ala
180 185 190

Asp Phe His Val Arg Asn Gly Ile Arg Gln Cys Leu Arg Ala Gly Leu
195 200 205

Arg Leu Ser Glu His Gly Phe His Lys Arg Arg Ile Gly Phe Asp Ile
210 215 220

Arg Gly
225

<210> 765
<211> 681
<212> DNA
<213> Neisseria meningitidis

<400> 765
atggcggatg acgggtgtgcg gccggcaactg tccggaaaat tgcccaatt cggttccgc 60
ctrccatttg acccattcgt ttcaagggtt ttggactgac ttttgtcat cggcttcagc 120
ttggaacaat gttcaagca aatcccggca acgcgccacc cattcgccga ccgttgcggg 180
ctgcccgcatt atccgtacaa tatccgtca ggtttcgagg aaggcggcaa aacgtccgaa 240
catggcggtt tgattcacgt cggcatacca cgcgctgaca tcctgccaca tcggattgcc 300

gcctttgggc agcatccagc ccaatatcat gcgttctacc gcctgcttcc aggtgaacag 360
ctgatccgtg ccgcgcgc a ttctccgtc caaaccggcag tggacgttca aatcgcaac 420
catgtcgtgc aaaagcggta aatcgccctc agtcagtccg aaacggcgc a acacggggcgc 480
ggttctaaa agcacaagca ctttatcgac ttcaaatcggtt cttccaaca agtcgaacag 540
gcatgacaaa gcatgaaaca gcccgttggcg gcccgtgatt ttcacgtctg acacggaaata 600
cgccaatgcc tgcgcaccgg gctgcgcctg tccgaacacg gcttcgataa aaggcgtata 660
ggattcgata ttccccgtt a 681

<210> 766
<211> 226
<212> PRT
<213> Neisseria meningitidis

<400> 766
Met Ala Asp Asp Gly Val Arg Arg Gln Leu Ser Gly Lys Leu Arg Gln
1 5 10 15

Phe Gly Phe Arg Leu Pro Phe Asp Pro Phe Val Phe Lys Val Leu Asp
20 25 30

Xaa Leu Leu Val Ile Gly Phe Ser Leu Glu Gln Cys Phe Lys Gln Ile
35 40 45

Pro Ala Thr Arg His Pro Phe Ala Asp Arg Cys Gly Leu Pro Pro Tyr
50 55 60

Pro Tyr Asn Ile Arg Gln Gly Phe Glu Glu Gly Lys Thr Ser Glu
65 70 75 80

His Gly Gly Leu Ile His Val Gly Ile Pro Arg Ala Asp Ile Leu Pro
85 90 95

His Arg Ile Ala Ala Phe Gly Gln His Pro Ala Gln Tyr His Ala Phe
100 105 110

Tyr Arg Leu Leu Pro Gly Glu Gln Leu Ile Arg Ala Ala Ala His Phe
115 120 125

Ser Val Gln Thr Pro Val Asp Val Gln Ile Gly Asn His Val Val Gln
130 135 140

Lys Arg Xaa Ile Val Leu Ser Gln Ser Glu Thr Ala Gln His Gly Arg
145 150 155 160

Gly Phe Xaa Lys His His Phe Ile Asp Phe Lys Ser Ala Phe Gln
165 170 175

Gln Val Glu Gln Ala Xaa Gln Ser Met Lys Gln Arg Leu Ala Ala Ala
180 185 190

Asp Phe His Val Xaa His Gly Ile Arg Gln Cys Leu Arg Thr Gly Leu
195 200 205

Arg Leu Ser Glu His Gly Phe Asp Lys Arg Arg Ile Gly Phe Asp Ile
210 215 220

Arg Gly
225

<210> 767

<211> 681

<212> DNA

<213> Neisseria meningitidis

<400> 767

gtggcggatg acggtgtgca gcggcaactg tccggaaaat tgcgccaatt cggttccgc 60
ctgccattt acccattcg tttcgaggct ttggactgcc ttttggtcat cgccttcgac 120
ttggaacaat gttcaagca aatcccgca acgcgccacc cattcgtaa ccgtcgccagg 180
ttgcccatt atccgtacaa tatccgttag ggtttcgagg aaggccgcaa aacgtccgaa 240
caggccggtt tggttcacgt cggcataccca cgcgcgtgacc ccctgccaca tcggattgcc 300
gccttcgggc agcatccagc ccaatatcat gcgttctacc gcctgcttcc aggtgaacag 360
ctgatccgtg ccgcgcgc aatccgttagtcc caaaccggccagg cggacgttca aatcggcaac 420
catgtcgtgc aaaagccgca aatcgtccctc agtcaagtccg aaatggccca acacggggcgc 480
ggtttctaaa agcacaagca ctttatcgac ttcaaatcggttccaaaca agtcaacag 540
gcatgacaaa gcatgaaaca gcgggttgctg gcggctgatt ttcacatccg aaacggaata 600
cggcaatgcc tgcgcgcgg gtcgcgcctg tccgaacacg gtttcgataa aaggcgtata 660
ggattcgtata ttccccgttta a 681

<210> 768

<211> 224

<212> PRT

<213> Neisseria meningitidis

<400> 768

Val Ala Asp Asp Gly Val Gln Arg Gln Leu Ser Gly Lys Leu Arg Gln
1 5 10 15

Phe Gly Phe Arg Leu Pro Phe Asp Pro Phe Val Phe Glu Ala Leu Asp
20 25 30

Cys Leu Leu Val Ile Ala Phe Asp Leu Glu Gln Cys Phe Lys Gln Ile
35 40 45

Pro Ala Thr Arg His Pro Phe Val Asn Arg Arg Arg Leu Pro Pro Tyr
50 55 60

Pro Tyr Asn Ile Arg Gln Gly Phe Glu Glu Gly Lys Thr Ser Glu
 65 70 75 80
 Gln Gly Gly Leu Val His Val Gly Ile Pro Arg Ala Asp Pro Leu Pro
 85 90 95
 His Arg Ile Ala Ala Phe Gly Gln His Pro Ala Gln Tyr His Ala Phe
 100 105 110
 Tyr Arg Leu Leu Pro Gly Glu Gln Leu Ile Arg Ala Ala Ala His Phe
 115 120 125
 Ser Val Gln Thr Pro Ala Asp Val Gln Ile Gly Asn His Val Val Gln
 130 135 140
 Lys Arg Gln Ile Val Leu Ser Gln Ser Glu Met Ala Gln His Gly Arg
 145 150 155 160
 Gly Phe Lys His Lys His Phe Ile Asp Phe Lys Ser Ala Phe Gln Gln
 165 170 175
 Val Glu Gln Ala Gln Ser Met Lys Gln Arg Leu Ser Ala Ala Asp Phe
 180 185 190
 His Ile Arg Asn Gly Ile Arg Gln Cys Leu Arg Ala Gly Leu Arg Leu
 195 200 205
 Ser Glu His Gly Phe Asp Lys Arg Arg Ile Gly Phe Asp Ile Arg Gly
 210 215 220

<210> 769
 <211> 657
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 769
 atggttgcgg tggatcctta tacggcaaaa gtggtaaca ccatgccgcg caatcagggt 60
 tggtatcaca ctatggatga aatccacggc gatatgatgc tcggtgccgc aggcgattat 120
 ctttggaaa cggcagcttc actgaccatt attatggtt tcagcggtt gtaccttgg 180
 tgggcgaaac agcgccgcat taaagcgatg ctgctccgc caaaaagcag ggcgcgttct 240
 tggtggcgga atctgcacgg cgcgttggaa acttgggtgt cgttgatttt actgttgttc 300
 tgccctgtcggtt gtagtgcgttgcg ggcaggattt tggggcgca aattcgtgca ggcttggaaat 360
 cagttccccgg ccggcaaattg ggggtgtcgaa ccgaaccccg tttcaatcggtt gccgacccac 420
 ggcgaggatgt tgaatgacgg caaggttaag gaagtgcgtt gtatggaa gcttatgcct 480
 atgcctgtct cagggacgac tgggggtgaa aacggcatta accccacccga gcccaataac 540
 attggaaacc gtcgaccgtt tcgcgcggaa aatcggttcc aaaggggcgtt atcagttgaa 600
 tttggccaaa ggcgaggacg gggatggac tttgtcgacg gattctatga gttatga 657

<210> 770
 <211> 218
 <212> PRT

<213> Neisseria gonorrhoeae

<400> 770

Met Val Ala Val Asp Pro Tyr Thr Ala Lys Val Val Asn Thr Met Pro
1 5 10 15

Arg Asn Gln Gly Trp Tyr His Thr Met Asp Glu Ile His Gly Asp Met
20 25 30

Met Leu Gly Ala Ala Gly Asp Tyr Leu Leu Glu Thr Ala Ala Ser Leu
35 40 45

Thr Ile Ile Met Val Val Ser Gly Leu Tyr Leu Trp Trp Ala Lys Gln
50 55 60

Arg Gly Ile Lys Ala Met Leu Leu Pro Pro Lys Ser Arg Ala Arg Ser
65 70 75 80

Trp Trp Arg Asn Leu His Gly Ala Phe Gly Thr Trp Val Ser Leu Ile
85 90 95

Leu Leu Leu Phe Cys Leu Ser Gly Ile Ala Trp Ala Gly Ile Trp Gly
100 105 110

Gly Lys Phe Val Gln Ala Trp Asn Gln Phe Pro Ala Gly Lys Trp Gly
115 120 125

Val Glu Pro Asn Pro Val Ser Ile Val Pro Thr His Gly Glu Val Leu
130 135 140

Asn Asp Gly Lys Val Lys Glu Val Pro Trp Ile Leu Glu Leu Met Pro
145 150 155 160

Met Pro Val Ser Gly Thr Thr Val Gly Glu Asn Gly Ile Asn Pro Thr
165 170 175

Glu Pro Asn Asn Ile Gly Asn Arg Arg Pro Phe Arg Ala Gly Asn Arg
180 185 190

Phe Gln Arg Ala Leu Ser Val Glu Phe Ala Gln Arg Arg Gly Arg Gly
195 200 205

Met Asp Phe Val Ala Gly Phe Tyr Glu Leu
210 215

<210> 771

<211> 654

<212> DNA

<213> Neisseria meningitidis

<400> 771

atggtcgcgg tcgatcctta tacggcaaaa gtggtcagta ccatgccgcg caatcagggt 60
tggattaca ccatggatga aatccacagc gatatgatgc tcggtgcgcc aggcgattat 120
ctttggaaa cggcagcttc actgaccatt attatggttg tcagcggctt gtaccttgg 180
tgggtgaaac ggcgcggcat caaggcgatg ctgctccgt caaaaggcar ggcgcgttct 240
tggtggcggatctgcacgg cacgtttgga acttgggtgt cgttgatttt gctgttgttc 300

tgcctgtcgg gtattgcttg ggcgggtatt tggggcggca agttcgataca ggcttggagt 360
cagttccctg ccggtaaatg gggtgtcga cccgaaccccg tttcagtcgt gccgaccac 420
ggcgaggat tgaatgacgg caaggttaag gaagtgcgt gggtttggaa gcttacgcct 480
atgcctgttt cagggacgac ygtgggcaaa gacggcatta accctgacga gccgatgaca 540
ttggaaaccg tcgaccgctt tgccggngaa aatcggttca aaggcggtt atcagttgaa 600
tttccccaaa ggcgaggacg gcgtatggac tttgtcgacg gattctatga gtta 654

<210> 772

<211> 218

<212> PRT

<213> Neisseria meningitidis

<400> 772

Met Val Ala Val Asp Pro Tyr Thr Ala Lys Val Val Ser Thr Met Pro
1 5 10 15

Arg Asn Gln Gly Trp Tyr Tyr Met Asp Glu Ile His Ser Asp Met
20 25 30

Met Leu Gly Ala Ala Gly Asp Tyr Leu Leu Glu Thr Ala Ala Ser Leu
35 40 45

Thr Ile Ile Met Val Val Ser Gly Leu Tyr Leu Trp Trp Val Lys Arg
50 55 60

Arg Gly Ile Lys Ala Met Leu Leu Pro Ser Lys Gly Xaa Ala Arg Ser
65 70 75 80

Trp Trp Arg Asn Leu His Gly Thr Phe Gly Thr Trp Val Ser Leu Ile
85 90 95

Leu Leu Leu Phe Cys Leu Ser Gly Ile Ala Trp Ala Gly Ile Trp Gly
100 105 110

Gly Lys Phe Val Gln Ala Trp Ser Gln Phe Pro Ala Gly Lys Trp Gly
115 120 125

Val Glu Pro Asn Pro Val Ser Val Val Pro Thr His Gly Glu Val Leu
130 135 140

Asn Asp Gly Lys Val Lys Glu Val Pro Trp Val Leu Glu Leu Thr Pro
145 150 155 160

Met Pro Val Ser Gly Thr Thr Val Gly Lys Asp Gly Ile Asn Pro Asp
165 170 175

Glu Pro Met Thr Leu Glu Thr Val Asp Arg Phe Ala Arg Xaa Asn Arg
180 185 190

Phe Gln Arg Ala Leu Ser Val Glu Phe Ala Gln Arg Arg Gly Arg Arg
195 200 205

Met Asp Phe Val Ala Gly Phe Tyr Glu Leu
210 215

<210> 773
<211> 653
<212> DNA
<213> Neisseria meningitidis

<400> 773
atggtcgcgg tcgatcctta tacggcaaaa gtggtcagta ccatgcccg caatcagggt 60
tggtattacg ccatggatga aatccacagg gatatgatgc tcggttcgcac aggtgattat 120
ctttggaaa cggctgcac tcgtacgatt atcatgataa tcagcggtt gtacctttgg 180
tgggtgaaac ggcgcgcat caaggcgatg ctgctccgc caaaaggcag ggcgcgttct 240
tggtggcga atctgcacgg cgccgttgga acttgggtgt cgttgatttt actgttgttc 300
tgccctgtcgg gtattgctt ggcaggattt tggggcggca agttcgtgca ggcttggagt 360
cagttcccgg caggcaaata ggggtgtcgaa ccgaaccctg tttcagtcgt gccgaccac 420
ggcgaggat tgaatgacgg caaggttaag gaagtgcgt gggtttggaa gcttacgcct 480
atgcctgttt cagggacgac tggggcgaaa gacggattt accctgacga gccgatgaca 540
ttggaaaccg tcgaccgtt tgccgggaa atcggttca aaggcgttta tcagctgaat 600
ttgccccaaag gcgaggacgg cgtatggact ttgtcgcagg attctatgag tta 653

<210> 774
<211> 218
<212> PRT
<213> Neisseria meningitidis

<400> 774
Met Val Ala Val Asp Pro Tyr Thr Ala Lys Val Val Ser Thr Met Pro
1 5 10 15
Arg Asn Gln Gly Trp Tyr Tyr Ala Met Asp Glu Ile His Ser Asp Met
20 25 30
Met Leu Gly Ser Thr Gly Asp Tyr Leu Leu Glu Thr Ala Ala Ser Leu
35 40 45
Thr Ile Ile Met Ile Ile Ser Gly Leu Tyr Leu Trp Trp Val Lys Arg
50 55 60
Arg Gly Ile Lys Ala Met Leu Leu Pro Pro Lys Gly Arg Ala Arg Ser
65 70 75 80
Trp Trp Arg Asn Leu His Gly Ala Phe Gly Thr Trp Val Ser Leu Ile
85 90 95
Leu Leu Leu Phe Cys Leu Ser Gly Ile Ala Trp Ala Gly Ile Trp Gly
100 105 110
Gly Lys Phe Val Gln Ala Trp Ser Gln Phe Pro Ala Gly Lys Trp Gly
115 120 125
Val Glu Pro Asn Pro Val Ser Val Val Pro Thr His Gly Glu Val Leu
130 135 140
Asn Asp Gly Lys Val Lys Glu Val Pro Trp Val Leu Glu Leu Thr Pro
145 150 155 160
Met Pro Val Ser Gly Thr Thr Val Gly Lys Asp Gly Ile Asn Pro Asp
165 170 175

Glu Pro Met Thr Leu Glu Thr Val Asp Arg Phe Ala Arg Xaa Asn Arg
180 185 190

Phe Gln Arg Ala Leu Ser Ala Glu Phe Ala Gln Arg Arg Gly Arg Arg
195 200 205

Met Asp Phe Val Ala Gly Phe Tyr Glu Leu
210 215

<210> 775

<211> 642

<212> DNA

<213> Neisseria gonorrhoeae

<400> 775

atgacggcaa ggttaaggaa gtgccgtgga ttttggagct tatgcctatg cctgtctcag 60
ggacgactgt gggtaaaaac ggcattaacc ccaccgagcc caataacatt ggaaaccgtc 120
gaccgtttcg cgccggaaat cggtttcaaa gggcgttatac agttgaattt gcccaaaggc 180
gaggacgggg tatggacttt gtgcgcaggat tctatgagtt atgacatgat cagcccgtt 240
gccgaccgca cggtacatat cgaccgtac agccggcaga ttcttgccga catccgttt 300
gacgattaca acccggttcgg caaatttatg gcggcaagca ttgcgcgtca tatggggact 360
ttgggcttgtt ggaggctgtt ggcgaacgtc gtgttctgcc ttgccgtat ttttatcgcc 420
atcagcggct gcgtgatgtg gtggaaacgc cgtccgtccg gcgtggcggg catttttcct 480
ccggcgcaaa aaatcaaact gcccgtctgg tgggcgatgg cattgcccgt gctgttgatt 540
gcaactgttt tcccgaccgc gctgcttgcc attgccgtga ttggctgtt ggataacctg 600
ctgctgtcgc ggattcctgt gttgaggaaa tggttaaat ga 642

<210> 776

<211> 213

<212> PRT

<213> Neisseria gonorrhoeae

<400> 776

Met Thr Ala Arg Leu Arg Lys Cys Arg Gly Phe Trp Ser Leu Cys Leu
1 5 10 15

Cys Leu Ser Gln Gly Arg Leu Trp Val Lys Thr Ala Leu Thr Pro Pro
20 25 30

Ser Pro Ile Thr Leu Glu Thr Val Asp Arg Phe Ala Arg Glu Ile Gly
35 40 45

Phe Lys Gly Arg Tyr Gln Leu Asn Leu Pro Lys Gly Glu Asp Gly Val
50 55 60

Trp Thr Leu Ser Gln Asp Ser Met Ser Tyr Asp Met Ile Ser Pro Phe
65 70 75 80

Ala Asp Arg Thr Val His Ile Asp Gln Tyr Ser Gly Glu Ile Leu Ala
85 90 95

Asp Ile Arg Phe Asp Asp Tyr Asn Pro Phe Gly Lys Phe Met Ala Ala
100 105 110

Ser Ile Ala Leu His Met Gly Thr Leu Gly Trp Trp Ser Val Leu Ala
115 120 125

Asn Val Val Phe Cys Leu Ala Val Ile Phe Ile Gly Ile Ser Gly Cys
130 135 140

Val Met Trp Trp Lys Arg Arg Pro Ser Gly Val Ala Gly Ile Val Pro
145 150 155 160

Pro Ala Gln Lys Ile Lys Leu Pro Val Trp Trp Ala Met Ala Leu Pro
165 170 175

Leu Leu Leu Ile Ala Leu Leu Phe Pro Thr Ala Leu Leu Ala Ile Ala
180 185 190

Val Ile Trp Leu Leu Asp Thr Leu Leu Ser Arg Ile Pro Val Leu
195 200 205

Arg Lys Trp Phe Lys
210

<210> 777
<211> 642
<212> DNA
<213> Neisseria meningitidis

<400> 777
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ggacgacygt gggcaaagac ggcattaacc ctgacgagcc gatgacattt gaaaccgtcg 120
accgcttgc gcggngaaat cggtttcaaa gggcgttatac agttgaattt gcccaaaggc 180
gaggacggcg tatggacttt gtcgcaggat tctatgagtt acgacatgtat cagcccgttt 240
gccgaccgca cggtacatat cgaccagtac agcggcaaaa tccttgccga catccgtttt 300
gacgattaca acccggttcgg caaatattatg gcggcaagca ttgcgtcgca tatggggact 360
ctgggcttgtt ggagcgtgtt ggcgaacgtc ttgttctgcc ttgcgtcat ttttatcggt 420
atcagcggct gcgtgatgtt gtggaaacgc cgtccgaccg gagcgggtggg catcggtccg 480
ccggcgcaga aagtcaagct gccggtttgg tggatgatgg cattgccgtt attggcaatc 540
gcactgctct tcccgacacctc actgcttgcc attgcgtga tttggctgtt ggatacgctg 600
ctgttgtcgc ggattccgtt ttgaggaga tggttaaat ga 642

<210> 778
<211> 213
<212> PRT
<213> Neisseria meningitidis

<400> 778
Met Thr Ala Arg Leu Arg Lys Cys Arg Gly Phe Trp Ser Leu Arg Leu
1 5 10 15

Cys Leu Phe Gln Gly Arg Xaa Trp Ala Lys Thr Ala Leu Thr Leu Thr
20 25 30

Ser Arg Xaa His Trp Lys Pro Ser Thr Ala Leu Arg Gly Glu Ile Gly
35 40 45

Phe Lys Gly Arg Tyr Gln Leu Asn Leu Pro Lys Gly Glu Asp Gly Val

50

55

60

Trp Thr Leu Ser Gln Asp Ser Met Ser Tyr Asp Met Ile Ser Pro Phe
65 70 75 80

Ala Asp Arg Thr Val His Ile Asp Gln Tyr Ser Gly Lys Ile Leu Ala
85 90 95

Asp Ile Arg Phe Asp Asp Tyr Asn Pro Phe Gly Lys Phe Met Ala Ala
100 105 110

Ser Ile Ala Leu His Met Gly Thr Leu Gly Trp Trp Ser Val Leu Ala
115 120 125

Asn Val Leu Phe Cys Leu Ala Val Ile Phe Ile Gly Ile Ser Gly Cys
130 135 140

Val Met Trp Trp Lys Arg Arg Pro Thr Gly Ala Val Gly Ile Val Pro
145 150 155 160

Pro Ala Gln Lys Val Lys Leu Pro Val Trp Trp Met Met Ala Leu Pro
165 170 175

Leu Leu Ala Ile Ala Leu Leu Phe Pro Thr Ser Leu Leu Ala Ile Ala
180 185 190

Val Ile Trp Leu Leu Asp Thr Leu Leu Leu Ser Arg Ile Pro Val Leu
195 200 205

Arg Arg Trp Phe Lys
210

<210> 779

<211> 641

<212> DNA

<213> Neisseria meningitidis

<400> 779

atgacggcaa ggttaaggaa gtgccgtggg ttttggagct tacgcctatg cctgtttcag 60
ggacgactgt gggcaaagac ggtattaacc ctgacgagcc gatgacattg gaaaccgtcg 120
accgtttgc gcgggaaatc ggtttcaaag ggcgttatca gctgaatttg cccaaaggcg 180
aggacggcgt atggactttg tcgcaggatt ctatgagttt cgacatgatc agccgtttg 240
ctgaccgcac ggtgcatatc gaccagtaca gcgcaagat tcttgccgac atccgtttg 300
acgattacaa cccgttcggc aaatttatgg cggcaagcat tgccgtcat atggggactt 360
tgggctggtg gagcgtgttg gcgaacgtt tggctgcct tgccgtgatt tttatcggca 420
tcagcggctg cgtgatgtgg tggaaacgcc gtccgtccgg cgcgggtggc atgggtccgc 480
cggcgcaaaa aatcaagctg cccgtctggt gggcaatggc ggtgccgctg ctgctgattg 540
cattgctttt cccgaccgcg ttgcttgcca ttgcccgtat ttggctgttg gatacgctgc 600
tgttgcgcg gattcctgtt ttgaggagat ggtttaatg a 641

<210> 780

<211> 212

<212> PRT

<213> Neisseria meningitidis

<400> 780

Met	Thr	Ala	Arg	Leu	Arg	Lys	Cys	Arg	Gly	Phe	Trp	Ser	Leu	Arg	Leu
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Cys	Leu	Phe	Gln	Gly	Arg	Leu	Trp	Ala	Lys	Thr	Val	Leu	Thr	Leu	Thr
					20				25					30	

Ser	Arg	His	Trp	Lys	Pro	Ser	Thr	Val	Leu	Arg	Xaa	Glu	Ile	Gly	Phe
					35			40				45			

Lys	Gly	Arg	Tyr	Gln	Leu	Asn	Leu	Pro	Lys	Gly	Glu	Asp	Gly	Val	Trp
					50				55			60			

Thr	Leu	Ser	Gln	Asp	Ser	Met	Ser	Tyr	Asp	Met	Ile	Ser	Pro	Phe	Ala
						65		70			75				80

Asp	Arg	Thr	Val	His	Ile	Asp	Gln	Tyr	Ser	Gly	Lys	Ile	Leu	Ala	Asp
						85			90			95			

Ile	Arg	Phe	Asp	Asp	Tyr	Asn	Pro	Phe	Gly	Lys	Phe	Met	Ala	Ala	Ser
						100			105			110			

Ile	Ala	Leu	His	Met	Gly	Thr	Leu	Gly	Trp	Trp	Ser	Val	Leu	Ala	Asn
						115			120			125			

Val	Leu	Phe	Cys	Leu	Ala	Val	Ile	Phe	Ile	Gly	Ile	Ser	Gly	Cys	Val
						130			135			140			

Met	Trp	Trp	Lys	Arg	Arg	Pro	Ser	Gly	Ala	Val	Gly	Met	Val	Pro	Pro
						145			150			155			160

Ala	Gln	Lys	Ile	Lys	Leu	Pro	Val	Trp	Trp	Ala	Met	Ala	Val	Pro	Leu
						165			170			175			

Leu	Leu	Ile	Ala	Leu	Leu	Phe	Pro	Thr	Ala	Leu	Leu	Ala	Ile	Ala	Val
						180			185			190			

Ile	Trp	Leu	Leu	Asp	Thr	Leu	Leu	Ser	Arg	Ile	Pro	Val	Leu	Arg	
						195			200			205			

Arg	Trp	Phe	Lys												
			210												

<210> 781
<211> 558
<212> DNA
<213> Neisseria gonorrhoeae

<400> 781
atgcacgacc acggcgccat ggatcgccgc ctccccgtt tcggaagtct gatgcggcga 60
gccgtaaatc adatcgacgc tgacggattt gaacctgtcc tcacggcgcc catcgatgac 120
ttctttgggt tcttcgttagc tttggatgccc gttgactgcc gcctgcactt tggggtcgaa 180
atccctgaatgc cccgacgctca tgcgggttggaa gccgagtcg cccgacgttgc ggacgggttc 240
gcggctgact ttgcgcgggt cgatttcgat ggaatatttcg ccggacggta tcagttcgaa 300

atgtttgcgg atcatgcgga agacacgttc gatctgtcg tcgctcaaaa aggtcggcgt 360
gccgcgcgg aagtgcagtt gggcaagctg gtgcgcgtccg ttcagatgtg gagcggcag 420
ttccatttct ttttcaagat attcgatgtg ggtatcggcg cggctttgt ctgggtgat 480
gattttgttgcggcagt agtagcagat ggtgttgcaa aacggaatgt gaatgtaaag 540
ggaaagcggt ttgtttaa 558

<210> 782

<211> 185

<212> PRT

<213> Neisseria gonorrhoeae

<400> 782

Met His Asp His Gly Ala Met Asp Arg Arg Leu Pro Ala Phe Gly Ser
1 5 10 15

Leu Met Arg Arg Ala Val Asn Xaa Ile Asp Ala Asp Gly Phe Glu Pro
20 25 30

Cys Leu Thr Gly Gly Ile Asp Asp Phe Phe Gly Phe Phe Val Ala Leu
35 40 45

Asp Ala Val Asp Cys Arg Leu His Phe Gly Val Glu Ile Leu Asn Ala
50 55 60

Asp Ala His Ala Val Glu Ala Glu Ser Ala Glu His Glu Asp Gly Val
65 70 75 80

Ala Ala Asp Phe Ala Arg Val Asp Phe Asp Gly Ile Phe Ala Gly Arg
85 90 95

Tyr Gln Phe Glu Met Phe Ala Asp His Ala Glu Asp Thr Phe Asp Leu
100 105 110

Phe Val Ala Gln Lys Gly Arg Arg Ala Ala Ala Glu Val Gln Leu Gly
115 120 125

Lys Leu Val Pro Ser Val Gln Met Trp Ser Glu Gln Phe His Phe Phe
130 135 140

Phe Lys Ile Phe Asp Val Gly Ile Gly Ala Ala Phe Val Phe Gly Asp
145 150 155 160

Asp Phe Val Ala Ala Val Val Ala Asp Gly Val Ala Lys Arg Asn
165 170 175

Val Asn Val Lys Gly Lys Arg Phe Val
180 185

<210> 783

<211> 531

<212> DNA

<213> Neisseria meningitidis

<400> 783

atggyggttt tcatgcwcmg aagtctggtg cggcaggccg taaatcaaat cgacgctgac 60
ggatttgaac cccgcttcgc ggcgcgcattt gatgacttct ttggtttctt cgtaactttg 120
gatgcgggtt accgcgcctt gcaacttggg gtcgaaatcc tgaatgccga tgctcatgcg 180
gttgaagccg agtctgccga gcatgaggac ggtgtcgccg ctgactttgc gcgggtcgat 240
ttcgatggag tattcgcggg tggggattaa ctcgaaatgt ttgcgtatca tgcgaaagac 300
acgttcgatc tggtcgccgc tcaaaaaaggt gcgtgcgcgc ccgaagtgcg gttggcaag 360
ctgggtccgtt ccgttcagat gtggagcgg cagttccatt tcttttcaa gatattcgat 420
gtaggcatcg ggcgcgcctt tgcgtttgtt gatgattttg ttgcagccgc agtagtagca 480
gatgggtttt cagaacggaa tgtgaatgtt aaggaaaagc gttttttttt a 531

<210> 784

<211> 176

<212> PRT

<213> Neisseria meningitidis

<400> 784

Met Xaa Val Leu Met Xaa Arg Ser Leu Val Arg Gln Ala Val Asn Gln
1 5 10 15

Ile Asp Ala Asp Gly Phe Glu Pro Arg Phe Ala Arg Arg Ile Asp Asp
20 25 30

Phe Phe Gly Phe Phe Val Thr Leu Asp Ala Val Asp Arg Arg Leu His
35 40 45

Phe Gly Val Glu Ile Leu Asn Ala Asp Ala His Ala Val Glu Ala Glu
50 55 60

Ser Ala Glu His Glu Asp Gly Val Ala Ala Asp Phe Ala Arg Val Asp
65 70 75 80

Phe Asp Gly Val Phe Ala Gly Asp Xaa Leu Glu Met Phe Ala Tyr
85 90 95

His Ala Glu Asp Thr Phe Asp Leu Phe Val Ala Gln Lys Gly Ala Cys
100 105 110

Pro Ala Glu Val Gln Leu Gly Lys Leu Val Pro Ser Val Gln Met Trp
115 120 125

Ser Glu Gln Phe His Phe Phe Lys Ile Phe Asp Val Gly Ile Gly
130 135 140

Ala Ala Phe Val Phe Gly Asp Asp Phe Val Ala Ala Ala Val Val Ala
145 150 155 160

Asp Gly Val Ala Glu Arg Asn Val Asn Val Lys Gly Lys Arg Phe Val
165 170 175

<210> 785

<211> 534

<212> DNA

<213> Neisseria meningitidis

<400> 785
atgggttgtt ttagtgcctcg aagtctgggt cgccaggccg taaatcaaat cgacgctgac 60
ggatttgaac cccgctcgc gcgcgcacatc gatgacttct ttggtttctt cgtaactttg 120
gatgcgggtt accgcgcct gcactttgg gtcgaaatcc tgaatgccg tgctcatgcg 180
gttgaagccg agtctgccga gcatgaggac ggtgtcgccg ctgactttgc gcgggtcgat 240
ttcgatggag tattcgcggg tggggattaa ctcgaaatgt ttgcgtatca tgcgaaagac 300
acgatcgatt tggtcgtcgc tcaaaaagggt cggcgtgccg ccgcgaagt gcagttggc 360
aagctgggtgc cgtccgttca gatgtggagc gagcagttcc atttctttt caagaaattc 420
gatgtaggca tcggcgcggc tttgtctt ggtgatgatt ttgttgccgc cgccagtagta 480
gcagatggtg ttgcagaacg gaatgtgaat gtaaaggaa agcggttgc 534

<210> 786

<211> 176

<212> PRT

<213> Neisseria meningitidis

<400> 786

Met Val Val Leu Met Leu Arg Ser Leu Val Arg Gln Ala Val Asn Gln
1 5 10 15

Ile Asp Ala Asp Gly Phe Glu Pro Arg Phe Ala Arg Arg Ile Asp Asp
20 25 30

Phe Phe Gly Phe Phe Val Thr Leu Asp Ala Val Asp Arg Arg Leu His
35 40 45

Phe Gly Val Glu Ile Leu Asn Ala Asp Ala His Ala Val Glu Ala Glu
50 55 60

Ser Ala Glu His Glu Asp Gly Val Ala Ala Asp Phe Ala Arg Val Asp
65 70 75 80

Phe Asp Gly Val Phe Ala Gly Gly Asp Leu Glu Met Phe Ala Tyr His
85 90 95

Ala Glu Asp Thr Phe Asp Leu Val Val Ala Gln Lys Gly Arg Arg Ala
100 105 110

Ala Ala Glu Val Gln Leu Gly Lys Leu Val Pro Ser Val Gln Met Trp
115 120 125

Ser Glu Gln Phe His Phe Phe Phe Lys Lys Phe Asp Val Gly Ile Gly
130 135 140

Ala Ala Phe Val Phe Gly Asp Asp Phe Val Ala Ala Ala Val Val Ala
145 150 155 160

Asp Gly Val Ala Glu Arg Asn Val Asn Val Lys Gly Lys Arg Phe Val
165 170 175

<210> 787
<211> 360
<212> DNA
<213> Neisseria gonorrhoeae

<400> 787
atggaattca ggcaccagg agtggtagtt ggtgtcgaac catttggtca tttcgatggc 60
gaattggct ttgttccgc gcgccagttt gaagaattgt tccaaaggca gggtttggct 120
atcgaagccg aaacggcgg gaatcgcgc cgtggataact tgcaggtcga ggatgtgatg 180
gtagaaaagtg aaatcacgtt cagcaacgtt atcagcggtt ggagcagctt ggttttcca 240
gttttctcg cgccaggctt tggcaacgtc gagcagctt tgttcactga tctttgcg 300
ccagtatccc tcttggcga atttcaattt acggaaggcg ccgacacgcg ggaagcctga 360

<210> 788
<211> 119
<212> PRT
<213> Neisseria gonorrhoeae

<400> 788
Met Glu Phe Arg His Gln Val Val Val Val Gly Val Glu Pro Phe Gly
1 5 10 15

His Phe Asp Gly Glu Leu Val Phe Val Ala Ala Arg Gln Leu Glu Glu
20 25 30

Leu Phe Gln Arg Gln Val Leu Ala Ile Glu Ala Glu Thr Gly Gly Asn
35 40 45

Arg Ala Arg Gly Tyr Leu Gln Val Glu Asp Val Met Val Glu Ser Glu
50 55 60

Ile Thr Tyr Ser Asn Val Ile Ser Val Arg Ser Ser Leu Val Phe Pro
65 70 75 80

Val Phe Leu Ala Gln Val Phe Gly Asn Val Glu Gln Leu Leu Phe Thr
85 90 95

Asp Leu Phe Ala Pro Val Phe Phe Leu Gly Glu Phe Gln Phe Thr Glu
100 105 110

Gly Ala Asp Thr Arg Glu Ala
115

<210> 789
<211> 359
<212> DNA
<213> Neisseria meningitidis

<400> 789
gtggaattca ggcaccaagt agtggtagtt ggtgtcgaac catttggtca tttcgatagc 60
gaattggct ttgttaccgc gcgccagttt gaagaattgt tccaaagaca gggtttggct 120
gtcgaagccg aagcggcgg gaatcgcgc cgtggact tgcaggtcga ggatgtggc 180
gtagaaaagtg aaatcstac gcaacgaaa tcggcgttgg cagcgcacctg gtgttccag 240
tttttctcg gcaagtctt agcaacagcc agcaatttctt gctcgctgat ttctttgcg 300

cagttttt cttgtcgaa tttcaattcg cggaaggcgc cgacacgcgg gaaggctga 359

<210> 790

<211> 119

<212> PRT

<213> Neisseria meningitidis

<400> 790

Val Glu Phe Arg His Gln Val Val Val Val Gly Val Glu Pro Phe Gly
1 5 10 15

His Phe Asp Ser Glu Leu Val Phe Val Thr Ala Arg Gln Leu Glu Glu
20 25 30

Leu Phe Gln Arg Gln Val Leu Ala Val Glu Ala Glu Ala Gly Gly Asn
35 40 45

Arg Ala Gly Gly Asp Leu Gln Val Glu Asp Val Val Val Glu Ser Glu
50 55 60

Ile Xaa Tyr Gly Asn Glu Ile Gly Val Gly Ser Asp Leu Val Phe Pro
65 70 75 80

Val Phe Leu Ala Gln Val Phe Ser Asn Ser Gln Gln Phe Leu Leu Ala
85 90 95

Asp Phe Phe Ala Pro Val Phe Phe Leu Cys Glu Phe Gln Phe Ala Glu
100 105 110

Gly Ala Asp Thr Arg Glu Ala
115

<210> 791

<211> 360

<212> DNA

<213> Neisseria meningitidis

<400> 791

gtggaattca ggcaccaaagt agtgttagttt ggtgtcgaaac catttggta tttcgatagc 60
gaatttggct ttgttaccgc gcgccagttt gaagaattgt tccaaagata ggttttggct 120
gtcgaagccg aagcgggcgg gaatcgccgc ggtggcgact tgcaggtcga ggatgtggtc 180
gtagaaaagtg aaatcgcccta cggcaacgtt atcggcggtt gcagcggcct ggtgtttcca 240
gtttttctcg cgcaagtctt tagcaaacgc cagcaattct tgctcgctga tttcttgcg 300
ccagtatttt tcttgtcgaa atttcaattt cggaaaggca ccgacacgcgg ggaaggctga 360

<210> 792

<211> 118

<212> PRT

<213> Neisseria meningitidis

<400> 792

Val Glu Phe Arg His Gln Val Val Val Val Gly Val Glu Pro Phe Gly
1 5 10 15

His Phe Asp Ser Glu Leu Val Phe Val Thr Ala Arg Gln Leu Glu Glu
20 25 30

Leu Phe Gln Arg Val Leu Ala Val Glu Ala Glu Gly Gly Asn Arg
35 40 45

Ala Gly Gly Asp Leu Gln Val Glu Asp Val Val Val Glu Ser Glu Ile
50 55 60

Ala Tyr Gly Asn Val Ile Gly Val Gly Ser Gly Leu Val Phe Pro Val
65 70 75 80

Phe Leu Ala Gln Val Phe Ser Asn Ser Gln Gln Phe Leu Leu Ala Asp
85 90 95

Phe Phe Ala Pro Val Phe Phe Leu Cys Glu Phe Gln Phe Ala Glu Gly
100 105 110

Thr Asp Thr Arg Glu Ala
115

<210> 793

<211> 669

<212> DNA

<213> Neisseria gonorrhoeae

<400> 793

atggattctt ttttcaaacc ggcagtttg gcggtttgt ggctgatgtt tgccgtccgc 60
cccgcccttg ccgacgagtt gaccaacctg ctcagcagcc gcgagcagat tctcagacag 120
tttgccgaag acgaacagcc cgaaaaatccc gtcaaccgag cccccgcccc gcggggcgggc 180
aatgcccacg aactcatcgg cggcgcgatg gggcttaacg aacagccccgt tgtacgcgtc 240
aaccgagccn ccgccccggcg ggcgggcaat gcccacaaac tcataccggcag cgcgtatgcgg 300
cttttggta ttgccttaccg ctacggcggc acatcggtgt ctaccggtt tgactgcagc 360
ggattcatgc agcacatctt caaacgcgcc atgggcatca acctgcgcgc cacgtcggcg 420
gaacaggcgc ggatgggcgc acccggttgc cgaagcgaat tgcagccccgg ggatatggtg 480
tttttccgca cgctcggcgg cagccgcatt tcccatgtcg gactttatat cggcaacaac 540
cgcttcatcc acgcgcgcgc cacggggaaa aatatcgaaa tcaccagcct gagccacaaa 600
tattggagcg gcaaataatgc gttcgccgc cgggtcaaga aaaacgaccc gtcacgcattt 660
ctgaactga 669

<210> 794

<211> 222

<212> PRT

<213> Neisseria gonorrhoeae

<400> 794

Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45

Leu Pro Val Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60

Leu Ile Gly Gly Ala Met Gly Leu Asn Glu Gln Pro Val Val Arg Val
 65 70 75 80

Asn Arg Ala Xaa Ala Arg Arg Ala Gly Asn Ala Asp Lys Leu Ile Gly
 85 90 95

Ser Ala Met Arg Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser
 100 105 110

Val Ser Thr Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys
 115 120 125

Arg Ala Met Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg
 130 135 140

Met Gly Ala Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val
 145 150 155 160

Phe Phe Arg Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr
 165 170 175

Ile Gly Asn Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile
 180 185 190

Glu Ile Thr Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe
 195 200 205

Ala Arg Arg Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 210 215 220

<210> 795

<211> 747

<212> DNA

<213> Neisseria meningitidis

<400> 795

ttttcaaacc cggcagtttg ggcgggtttg tggctgawgt ttgccgtccg ccccgccctt 60
 gcccacgagt tgaccaacct gctcagcagc cgcgagcaga ttctcagaca gtttgcggaa 120
 gacgaacagc ccgtttacc catcaaccga gccccggcc ggcggggcggg caatgcccac 180
 gaactcatcg gcagcgcgat ggggcttaac gaacagcccg ttttacccgt caaccgagtc 240
 cccgcccggc gggcggcaa tgccgacgaa ctcatcgca acgcgatggg gcttaacgaa 300
 cagcccggtt tacccgtcaa ccgagccccc gcccggcggg cgggcaatgc cgacgaactc 360
 atcggcaacg cgatggact tttgggtatt gcctaccgct acggcggcac atcggttct 420
 accggttttg actgcagcgg cttcatgcag cacatctca aacgcgcccac gggcatcaac 480
 ctgcccgcga cgtcggcaga acaggcacgg atgggtacgc cgggtgccc aagcgaattg 540
 cagccccggag atatggtgtt ttccgcacg ctcggcggca gccgcatttc ccatgtcgga 600
 ctttatatcg gcaacaaccg cttcatccac ggcggcgcga cggggaaaaaa tatcgaaatc 660
 accagcctga gccacaata ttggagcggc aaatacgcgt tcgcccgcgg ggtcaagaaa 720
 aacgaccctgt cccgctttct gaactga 747

<210> 796
<211> 248
<212> PRT
<213> Neisseria meningitidis

<400> 796

Phe Ser Asn Pro Ala Val Trp Ala Val Leu Trp Leu Xaa Phe Ala Val
1 5 10 15

Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser Ser Arg Glu
20 25 30

Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val Leu Pro Ile
35 40 45

Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
50 55 60

Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Val
65 70 75 80

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
85 90 95

Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala Pro Ala Arg
100 105 110

Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met Gly Leu Leu
115 120 125

Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr Gly Phe Asp
130 135 140

Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met Gly Ile Asn
145 150 155 160

Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr Pro Val Ala
165 170 175

Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg Thr Leu Gly
180 185 190

Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn Asn Arg Phe
195 200 205

Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr Ser Leu Ser
210 215 220

His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg Val Lys Lys
225 230 235 240

Asn Asp Pro Ser Arg Phe Leu Asn
245

<210> 797

<211> 843
<212> DNA
<213> Neisseria meningitidis

<400> 797
atggattctt ttttcaaacc ggcaggttgg gcggtttgt ggctgatgtt tgccgtccgc 60
cccggcccttg ccgacgagtt gaccaacctg ctcagcagcc gcgagcagat tctcagacag 120
tttggccgaag acgaacagcc cgttttaccc atcaaccgan cccccgcccc gcgggcgggc 180
aatggccgacg aactcatcgg cagcgcgatg gggcttaacg aacagccctg tttacccgtc 240
aaccgantcc ccgccccggcg ggcgggcaat gccgacnaac tcatcgccaa cgcgatgggg 300
cttaacgaac agcccggttt acccgtcaac cgagttcccg cccggcgggc gggcaatgcc 360
gacgaactca tcggcaacgc gatggggctt aacgaacagc ccgtttacc cgtcaaccga 420
gcccccgccc ggcggccggg caatgccgac gaactcatcg gcaacgcgat gggacttttg 480
ggtattgcct accgctacgg cgccacatcg atttctaccg gttttgactg cagcggtttc 540
atgcagcaca ttttcaaaccg cccatgggc atcaacctgc cgccgacacgtc ggcagaacag 600
gcgcggatgg gtacgcccgt tgcccgaaagc gaattgcagc ccggggatat ggtgtntttc 660
cgcacgctcg gcggcagccg catttccat gtcggacttt atatcgccaa caaccgcttc 720
atccacgcgc cgccgacccgg gaaaaatatc gaaatcacca gcctgagcca caaatattgg 780
agcggcaaat acgcgttcgc ccgcggggtc aagaaaaacg acccgtcccg ctttctgaac 840
tga 843

<210> 798
<211> 280
<212> PRT
<213> Neisseria meningitidis

<400> 798
Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45

Leu Pro Ile Asn Arg Xaa Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80

Asn Arg Xaa Pro Ala Arg Arg Ala Gly Asn Ala Asp Xaa Leu Ile Gly
85 90 95

Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Val
100 105 110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125

Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala Pro Ala Arg
130 135 140

Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met Gly Leu Leu
145 150 155 160

Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Ile Ser Thr Gly Phe Asp
165 170 175

Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met Gly Ile Asn
180 185 190

Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr Pro Val Ala
195 200 205

Arg Ser Glu Leu Gln Pro Gly Asp Met Val Xaa Phe Arg Thr Leu Gly
210 215 220

Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn Asn Arg Phe
225 230 235 240

Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr Ser Leu Ser
245 250 255

His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg Val Lys Lys
260 265 270

Asn Asp Pro Ser Arg Phe Leu Asn
275 280

<210> 799
<211> 669
<212> DNA
<213> Neisseria gonorrhoeae

<400> 799
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cccgcccttg ccgacaggtt gaccaacctg ctcagcagcc gcgagcagat tctcagacag 120
tttgccgaag acgaacagcc cgttttaccc gtcaaccgag ccccccggcc gcgggcggc 180
aatgccgacg aactcatcg cgccgcgatg gggcttaacg aacagccccgt tgcgcgcgtc 240
aaccgagccn ccgcccggcg ggcgggcaat gccgacaaac tcattggcag cgccatgcgg 300
cttttgggtt ttgccttaccg ctacggcgcc acatcggtgt ctaccggttt tgactgcage 360
ggattcatgc agcacatctt caaacgcgcc atgggcatac acctgccgcg cacgtcgccg 420
gaacaggcgcc ggatggcgcc acccggttgcg cgaagcgaat tgcagccccgg ggatatggtg 480
tttttccgca cgctccggcg cagccgcatt tcccatgtcg gactttatat cggcaacaac 540
cgcttcatcc acgcggcgcc cacggggaaa aatatcgaaa tcaccagcct gagccacaaa 600
tattggagcg gcaaataatgc gttcgccgcg cgggtcaaga aaaacgaccc gtcacgcgtt 660
ctgaactga 669

<210> 800
<211> 222
<212> PRT
<213> Neisseria gonorrhoeae

<400> 800
Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
 35 40 45
 Leu Pro Val Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
 50 55 60
 Leu Ile Gly Gly Ala Met Gly Leu Asn Glu Gln Pro Val Val Arg Val
 65 70 75 80
 Asn Arg Ala Xaa Ala Arg Arg Ala Gly Asn Ala Asp Lys Leu Ile Gly
 85 90 95
 Ser Ala Met Arg Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser
 100 105 110
 Val Ser Thr Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys
 115 120 125
 Arg Ala Met Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg
 130 135 140
 Met Gly Ala Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val
 145 150 155 160
 Phe Phe Arg Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr
 165 170 175
 Ile Gly Asn Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile
 180 185 190
 Glu Ile Thr Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe
 195 200 205
 Ala Arg Arg Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
 210 215 220

<210> 801
 <211> 756
 <212> DNA
 <213> Neisseria meningitidis

<400> 801
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 cccgccttg ccgacgagtt gaccaacytg ctcagcagcc gcgagcagat tctcagacag 120
 tttgccgaag acgaacagcc cgttttaccc atcaaccgag cccccgcccc gcgggcgggc 180
 aatgccgacg aactcatcg cagcgcgatg gggcttaacg aacagcccgat tttacccgtc 240
 aaccgagtcc ccccccggcg ggcgggcaat gccgacgaaat tcatacgccaa cgcgatgggg 300
 ctaacgaaac agcccgaaaaat acccgtaaac cgagcccccg cccggcgggc gggcaatgcc 360
 gacgaactca tcggcaacgc gatgggactt ttgggttattt cctaccgcta cggccggcaca 420
 tcggtttcta ccggtttga ctgcagcggc ttcatgcacg acatcttcaa acgcgcctatg 480
 ggcataacc tgccgcgcac gtcggcgagaa caggcacgga tgggtacgccc ggttgcggca 540
 agcgaattgc agcccgaga tatgggtttt ttccgcacgc tcggcgccag ccgcatttcc 600
 catgtcggac ttatatatcg caacaaccgc ttcatccacg cgccgcgcac gggaaaaaat 660
 atcgaatca ccagcctgag ccacaaatat tggagcggca aatacgcgtt cgcccgccgg 720
 gtcaagaaaa acgaccgc tc cgcgttctg aactga 756

<210> 802
<211> 251
<212> PRT
<213> Neisseria meningitidis

<400> 802
Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15
Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30
Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45

Leu Pro Ile Asn Arg Ala Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60
Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80
Asn Arg Val Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly
85 90 95
Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala
100 105 110
Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125
Gly Leu Leu Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Val Ser Thr
130 135 140
Gly Phe Asp Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met
145 150 155 160
Gly Ile Asn Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr
165 170 175
Pro Val Ala Arg Ser Glu Leu Gln Pro Gly Asp Met Val Phe Phe Arg
180 185 190
Thr Leu Gly Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn
195 200 205
Asn Arg Phe Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr
210 215 220
Ser Leu Ser His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg
225 230 235 240
Val Lys Lys Asn Asp Pro Ser Arg Phe Leu Asn
245 250

<210> 803
<211> 843

<212> DNA
<213> Neisseria meningitidis

<400> 803
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cccgcccttg ccgacgagtt gaccaacctg ctcagcagcc gcgagcagat tctcagacag 120
tttgcgcgaag acgaacagcc cggtttaacc atcaaccgan cccccgccc gcgggcgggc 180
aatgcccacg aactcatcg cagcgcgtat gggcttaacg aacagccgt tttacccgtc 240
aaccgantcc ccgccccggcg ggcgggcaat gccgacnaac tcatacgccaa cgccatgggg 300
cttaacgaac agcccggtt acccgtaaac cgagtccccg cccggcgggc gggcaatgcc 360
gacgaactca tcggcaacgc gatggggctt aacgaacagc ccgttttacc cgtcaaccga 420
gcccccgccc ggcgggccc caatgccgac gaactcatcg gcaacgcgtat gggactttt 480
ggtattgcct accgctacgg cggcacatcg atttctaccg gtttgactg cagccgcttc 540
atgcagcaca tcttcaaaccg cggccatgggc atcaacctgc cgccgacgtc ggcagaacag 600
gcccggatgg gtacgcccgt tgcccgaagc gaattgcagc ccggggatat ggtgtnttc 660
cgacacgctcg gccgcagccg catttcccat gtcgacttt atatcggcaa caaccgcttc 720
atccacgcgc cgcgcacggg gaaaaatatc gaaatcacca gcctgagcca caaatattgg 780
agcggcaaat acgcgttcgc ccgcgggtc aagaaaaacg acccgccccg ctttctgaac 840
tga 843

<210> 804
<211> 280
<212> PRT
<213> Neisseria meningitidis

<400> 804
Met Asp Ser Phe Phe Lys Pro Ala Val Trp Ala Val Leu Trp Leu Met
1 5 10 15

Phe Ala Val Arg Pro Ala Leu Ala Asp Glu Leu Thr Asn Leu Leu Ser
20 25 30

Ser Arg Glu Gln Ile Leu Arg Gln Phe Ala Glu Asp Glu Gln Pro Val
35 40 45

Leu Pro Ile Asn Arg Xaa Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu
50 55 60

Leu Ile Gly Ser Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val
65 70 75 80

Asn Arg Xaa Pro Ala Arg Arg Ala Gly Asn Ala Asp Xaa Leu Ile Gly
85 90 95

Asn Ala Met Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Val
100 105 110

Pro Ala Arg Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met
115 120 125

Gly Leu Asn Glu Gln Pro Val Leu Pro Val Asn Arg Ala Pro Ala Arg
130 135 140

Arg Ala Gly Asn Ala Asp Glu Leu Ile Gly Asn Ala Met Gly Leu Leu
145 150 155 160

Gly Ile Ala Tyr Arg Tyr Gly Gly Thr Ser Thr Gly Phe Asp
165 170 175

Cys Ser Gly Phe Met Gln His Ile Phe Lys Arg Ala Met Gly Ile Asn
180 185 190

Leu Pro Arg Thr Ser Ala Glu Gln Ala Arg Met Gly Thr Pro Val Ala
195 200 205

Arg Ser Glu Leu Gln Pro Gly Asp Met Val Xaa Phe Arg Thr Leu Gly
210 215 220

Gly Ser Arg Ile Ser His Val Gly Leu Tyr Ile Gly Asn Asn Arg Phe
225 230 235 240

Ile His Ala Pro Arg Thr Gly Lys Asn Ile Glu Ile Thr Ser Leu Ser
245 250 255

His Lys Tyr Trp Ser Gly Lys Tyr Ala Phe Ala Arg Arg Val Lys Lys
260 265 270

Asn Asp Pro Ser Arg Phe Leu Asn
275 280

<210> 805
<211> 597
<212> DNA
<213> Neisseria gonorrhoeae

<400> 805
atgagcggaa tcctcaggca gcccagcggtt ctgcgtttcc tcacgcttgc cgtgtacgcg 60
cttgcgatta tcgtgcgcac gcgcacgggc aatatcttct gcaaccccggt actcgtcagc 120
actatcgtgc tgattgccta cctgaaaatc ctcggatcatcg attatgcgtt gtaccacaac 180
gccgcgcaat tcattgattt tcggctgaaa cccgcgtcg tcgtgcttgc cgtgccgctc 240
tacccaaacc gccgtaaaat cttcaaccag tggctgccc tcattcggttgc gcagcttgc 300
ggcagcgtta cgggcattgt tacggggatg tattttcccg cttggctcgg gccggatacc 360
caattctcct tccccgcctcg tcttcaatat ctgttattta caccctctgg aatcccaatt 420
cacaccctgt atgcgcgggt tctcccgcca tttctgttgc ctccgcctct cctggcgccg 480
ctcggccgcg atacattgcg ccgggtcaca atactccaa aaaaactacg gccgttaag 540
cccctccctcc cagttgttgtt cctttctcct ccgggcctcg cccctccctt cttataa 597

<210> 806
<211> 198
<212> PRT
<213> Neisseria gonorrhoeae

<400> 806
Met Ser Glu Ile Leu Arg Gln Pro Ser Val Leu Leu Phe Leu Thr Leu
1 5 10 15

Ala Val Tyr Ala Leu Ala Ile Ile Val Arg Thr Arg Thr Gly Asn Ile

20

25

30

Phe Cys Asn Pro Val Leu Val Ser Thr Ile Val Leu Ile Ala Tyr Leu
 35 40 45

Lys Ile Leu Gly Ile Asp Tyr Ala Val Tyr His Asn Ala Ala Gln Phe
 50 55 60

Ile Asp Phe Arg Leu Lys Pro Ala Val Val Val Leu Ala Val Pro Leu
 65 70 75 80

Tyr Gln Asn Arg Arg Lys Ile Phe Asn Gln Trp Leu Pro Val Ile Val
 85 90 95

Ser Gln Leu Ala Gly Ser Val Thr Gly Ile Val Thr Gly Met Tyr Phe
 100 105 110

Ala Ala Trp Leu Gly Pro Asp Thr Gln Phe Ser Phe Pro Pro Arg Leu
 115 120 125

Gln Tyr Leu Leu Phe Thr Pro Ser Gly Ile Pro Ile His Thr Leu Tyr
 130 135 140

Ala Arg Val Leu Pro Pro Phe Leu Leu Pro Pro Pro Leu Leu Pro Arg
 145 150 155 160

Leu Gly Pro His Thr Leu Arg Arg Phe Thr Ile Leu Pro Lys Lys Leu
 165 170 175

Arg Pro Phe Lys Pro Leu Leu Pro Val Val Val Leu Ser Pro Pro Gly
 180 185 190

Leu Ala Pro Pro Leu Leu
 195

<210> 807

<211> 693

<212> DNA

<213> Neisseria meningitidis

<400> 807

atgaacgaaa tcctcaggca gcccagcggtt ctgctttcc tcacgcttgc cgtgtacgcg 60
 cttgcgattta tcgtgcgcac ggcacgggc aatatcttct gcaaccccggt actcgtcagc 120
 actatcgtgc tgattgccta cctgaaaatc ctcggtatcg attatgcgggt gtaccacaac 180

gccgcgcaat tcattgattt ttggctgaaa cccggcgctcg tcgtgcttgc cgtgccgctc 240
 taccaaaacc gccgtaaaat cttcaaccag tggctgcccgt tcatacggttc acagcttgcg 300
 ggcagcgtta cgggcattgt tacaggatg tattttgcca aatggctggg cgcggAACgc 360
 gaagtgcgtcc tctcgctcgc gtccaaatct gttaccaacc ccatcgctat tgaaatcacc 420
 cgctccatcg gcggcattcc cgccattacc gccggccaccg tcatacgttc cggctctggtc 480
 ggacagattt cccgttacaa aatgctgaag aacacggctcg tcatacgccctc gtccgtgggt 540
 atgtcgctcg gcacgcttc gcacgcgtat gggattgcccgt cctcgctcga acgcagccgc 600
 cgtatggcg catacgcggg gctggggctg acgttcaacg gcgtactgac cgcgttgatt 660
 cgcggctgc tcataccccgt tttgggattt tga 693

<210> 808
<211> 230
<212> PRT
<213> Neisseria meningitidis

<400> 808
Met Asn Glu Ile Leu Arg Gln Pro Ser Val Leu Leu Phe Leu Thr Leu
1 5 10 15

Ala Val Tyr Ala Leu Ala Ile Ile Val Arg Thr Arg Thr Gly Asn Ile
20 25 30

Phe Cys Asn Pro Val Leu Val Ser Thr Ile Val Leu Ile Ala Tyr Leu
35 40 45

Lys Ile Leu Gly Ile Asp Tyr Ala Val Tyr His Asn Ala Ala Gln Phe
50 55 60

Ile Asp Phe Trp Leu Lys Pro Ala Val Val Val Leu Ala Val Pro Leu
65 70 75 80

Tyr Gln Asn Arg Arg Lys Ile Phe Asn Gln Trp Leu Pro Val Ile Val
85 90 95

Ser Gln Leu Ala Gly Ser Val Thr Gly Ile Val Thr Gly Met Tyr Phe
100 105 110

Ala Lys Trp Leu Gly Ala Glu Arg Glu Val Val Leu Ser Leu Ala Ser
115 120 125

Lys Ser Val Thr Asn Pro Ile Ala Ile Glu Ile Thr Arg Ser Ile Gly
130 135 140

Gly Ile Pro Ala Ile Thr Ala Ala Thr Val Ile Ile Ala Gly Leu Val
145 150 155 160

Gly Gln Ile Ala Gly Tyr Lys Met Leu Lys Asn Thr Val Val Met Pro
165 170 175

Ser Ser Val Gly Met Ser Leu Gly Thr Ala Ser His Ala Met Gly Ile
180 185 190

Ala Ala Ser Leu Glu Arg Ser Arg Arg Met Ala Ala Tyr Ala Gly Leu
195 200 205

Gly Leu Thr Phe Asn Gly Val Leu Thr Ala Leu Ile Ala Pro Leu Leu
210 215 220

Ile Pro Val Leu Gly Phe
225 230

<210> 809
<211> 693
<212> DNA
<213> Neisseria meningitidis

<400> 809
atgaacgaaa tcctcaggca gccgagcatc ctgctttcc tcacgcttgc cgtgtacg 60
cttgcgatta tcgtgcgcac ggcacgggt aatatcttct gcaaccccgt actcgctc 120
actatcgtc tgattgccta cctgaaaatc ctcggatcg attatcggt gtaccacaac 180
ggcgccagt ttatcgatt ctggctcaag cccgcccgc tcgtgcttgc cgtgccc 240
taccaaaacc gccgtaaaat cttcaaccaa tggctcccc tcatcgtttc gcagcttgc 300
ggcagcgta cgggcatgt tacggggatg tatttgcca aatggctggg cgccgaaacgc 360
gaagtcgtcc tctcgctcgc gtccaaatct gttaccaatc ctatcgccat cgaaatcacc 420
cgctccatcg gcggcattcc cgccattacc gccgccaccg tcatcattgc cggcctggc 480
ggacagattt ccggttacaa aatgttggaaa aacacggtcg ttatgcctc atctgtcgg 540
atgtcgctcg gcacggcttc gcacgcgatg ggcattgccc ctcgctcga acgcagccgc 600
cgcatggccg cataccgggg gctggggctg acgttcaacg gcgtactgac cgcgctgatt 660
cgccgctgc ttatccccgt tttggattt tga 693

<210> 810

<211> 230

<212> PRT

<213> Neisseria meningitidis

<400> 810

Met Asn Glu Ile Leu Arg Gln Pro Ser Ile Leu Leu Phe Leu Thr Leu
1 5 10 15

Ala Val Tyr Ala Leu Ala Ile Ile Val Arg Thr Arg Thr Gly Asn Ile
20 25 30

Phe Cys Asn Pro Val Leu Val Ser Thr Ile Val Leu Ile Ala Tyr Leu
35 40 45

Lys Ile Leu Gly Ile Asp Tyr Ala Val Tyr His Asn Ala Ala Gln Phe
50 55 60

Ile Asp Phe Trp Leu Lys Pro Ala Val Val Val Leu Ala Val Pro Leu
65 70 75 80

Tyr Gln Asn Arg Arg Lys Ile Phe Asn Gln Trp Leu Pro Val Ile Val
85 90 95

Ser Gln Leu Ala Gly Ser Val Thr Gly Ile Val Thr Gly Met Tyr Phe
100 105 110

Ala Lys Trp Leu Gly Ala Glu Arg Glu Val Val Leu Ser Leu Ala Ser
115 120 125

Lys Ser Val Thr Asn Pro Ile Ala Ile Glu Ile Thr Arg Ser Ile Gly
130 135 140

Gly Ile Pro Ala Ile Thr Ala Ala Thr Val Ile Ile Ala Gly Leu Val
145 150 155 160

Gly Gln Ile Ala Gly Tyr Lys Met Leu Lys Asn Thr Val Val Met Pro
165 170 175

Ser Ser Val Gly Met Ser Leu Gly Thr Ala Ser His Ala Met Gly Ile
180 185 190

Ala Ala Ser Leu Glu Arg Ser Arg Arg Met Ala Ala Tyr Ala Gly Leu
195 200 205

Gly Leu Thr Phe Asn Gly Val Leu Thr Ala Leu Ile Ala Pro Leu Leu
210 215 220

Ile Pro Val Leu Gly Phe
225 230

<210> 811
<211> 345
<212> DNA
<213> Neisseria gonorrhoeae

<400> 811
atgaacatca tccgcgcgt cctcatcatc ctgcggctgcc tcgcccggcg cgaaaccgccc 60
gttttcctag caggcatcaa actgcccggc agcatcgctg gcatgggggt gctgtttgcg 120
cttttgcagg cgggttggct caaaacgtct tggctgcaac agcttaccga cgcgctgatg 180
gcaaaccctga cgctgttccct cgtgcccggcc tgcgtggcggt tcatacgcta tttggatttg 240
attgccgacg attggttttc gataactgggtt tccgcctccg ccagcactt gtgcgtactg 300
ctggttacgg gcaagggttca cgcgtggata cggagcatta tctga 345

<210> 812
<211> 114
<212> PRT
<213> Neisseria gonorrhoeae

<400> 812
Met Asn Ile Ile Arg Ala Leu Leu Ile Ile Leu Gly Cys Leu Ala Ala
1 5 10 15

Gly Glu Thr Ala Val Phe Leu Ala Gly Ile Lys Leu Pro Gly Ser Ile
20 25 30

Val Gly Met Gly Val Leu Phe Ala Leu Leu Gln Ala Gly Trp Leu Lys
35 40 45

Thr Ser Trp Leu Gln Gln Leu Thr Asp Ala Leu Met Ala Asn Leu Thr
50 55 60

Leu Phe Leu Val Pro Pro Cys Val Ala Val Ile Ser Tyr Leu Asp Leu
65 70 75 80

Ile Ala Asp Asp Trp Phe Ser Ile Leu Val Ser Ala Ser Ala Ser Thr
85 90 95

Leu Cys Val Leu Leu Val Thr Gly Lys Val His Arg Trp Ile Arg Ser
100 105 110

Ile Ile

<210> 813

<211> 203
<212> DNA
<213> Neisseria meningitidis

<400> 813
acgtcttkgc tgcaaacagct taccgacgcg ctgatgtcga acctgacgct gttcctcgta 60
ccgcctgcgt ggccgtcatc agctatttgg atttgattgc cgacgattgg ttttcgatac 120
tggtttccgc ctccgccagc actttgtgcg tactgttgt tacgggcaaa gtccaccggt 180
ggatacgggg tattatccga tga 203

<210> 814
<211> 67
<212> PRT
<213> Neisseria meningitidis

<400> 814
Thr Ser Xaa Leu Gln Gln Leu Thr Asp Ala Leu Met Ser Asn Leu Thr
1 5 10 15

Leu Phe Leu Val Pro Pro Cys Val Ala Val Ile Ser Tyr Leu Asp Leu
20 25 30

Ile Ala Asp Asp Trp Phe Ser Ile Leu Val Ser Ala Ser Ala Ser Thr
35 40 45

Leu Cys Val Leu Leu Val Thr Gly Lys Val His Arg Trp Ile Arg Gly
50 55 60

Ile Ile Arg
65

<210> 815
<211> 345
<212> DNA
<213> Neisseria meningitidis

<400> 815
atgaacatca tccgcgcgct cctcatcatc ctgcgctgcc tcgccaccgg cgaaaccgcc 60
gttttcctag caggcatcaa actgcccggc agcatcgctg gcatgggcgt actgtttgcg 120
cttttgcagg cgggttgggt caaaaacgtct tggctgcaac agcttaccga cgcgctgatg 180
gcgaatctga cggttttct cgtgccccc tgcgtggcgg tcatcagcta tttggatttg 240
attgccgacg attggttttc gatactgggt tccgcctccg ccagcacttt gtgcgtactg 300
ctggttacag gcaagggttca ccgctggata cgagcatta tctga 345

<210> 816
<211> 114
<212> PRT
<213> Neisseria meningitidis

<400> 816
Met Asn Ile Ile Arg Ala Leu Leu Ile Ile Leu Gly Cys Leu Ala Thr
1 5 10 15

Gly Glu Thr Ala Val Phe Leu Ala Gly Ile Lys Leu Pro Gly Ser Ile
20 25 30

Val Gly Met Gly Val Leu Phe Ala Leu Leu Gln Ala Gly Trp Val Lys
35 40 45

Thr Ser Trp Leu Gln Gln Leu Thr Asp Ala Leu Met Ala Asn Leu Thr
50 55 60

Leu Phe Leu Val Pro Pro Cys Val Ala Val Ile Ser Tyr Leu Asp Leu
65 70 75 80

Ile Ala Asp Asp Trp Phe Ser Ile Leu Val Ser Ala Ser Ala Ser Thr
85 90 95

Leu Cys Val Leu Leu Val Thr Gly Lys Val His Arg Trp Ile Arg Ser
100 105 110

Ile Ile

<210> 817

<211> 324

<212> DNA

<213> Neisseria meningitidis

<400> 817

atgaaaaaat tattgattgc cgcaatgatg gcggctgcct tggcagcttg ttgcgaagaa 60
gccaaacagg aggttaagga agcggttcaa gccgttgagt ccgatgttaa agacactgcg 120
gcttcgtccg ccgagtctgc cgcttctgcc gtcgaagaag cgaaagacca agtcaaagat 180
gctgcggctg atgcaaaggc aagtgccag gaagctgtaa ctgaagccaa agaagctgta 240
actgaagcag ctaaagatac tttgaacaaa gctgccgacg cgactcagga agcggcagac 300
aaaatgaaag atgcccacaa ataa 324

<210> 818

<211> 107

<212> PRT

<213> Neisseria meningitidis

<400> 818

Met Lys Lys Leu Leu Ile Ala Ala Met Met Ala Ala Ala Leu Ala Ala
1 5 10 15

Cys Ser Gln Glu Ala Lys Gln Glu Val Lys Glu Ala Val Gln Ala Val
20 25 30

Glu Ser Asp Val Lys Asp Thr Ala Ala Ser Ala Ala Glu Ser Ala Ala
35 40 45

Ser Ala Val Glu Glu Ala Lys Asp Gln Val Lys Asp Ala Ala Ala Asp
50 55 60

Ala Lys Ala Ser Ala Glu Glu Ala Val Thr Glu Ala Lys Glu Ala Val
65 70 75 80

Thr Glu Ala Ala Lys Asp Thr Leu Asn Lys Ala Ala Asp Ala Thr Gln
85 90 95

Glu Ala Ala Asp Lys Met Lys Asp Ala Ala Lys
100 105

<210> 819
<211> 324
<212> DNA
<213> Neisseria meningitidis

<400> 819
atgaaaaaat tattgattgc cgcaatgatg gcggctgcct tggcagcttg ttgcgaagaa 60
gccaaacagg aggttaagga agcggttcaa gccgttgagt ccgatgttaa agacactgctg 120
gcttcgtccg ccgagtcgtc cgcttcgtcc gtcgaagaag cgaaagacca agtcaaagat 180
gctgcggctg atgcaaaggc aagtgcgcag gaagctgtaa ctgaagccaa agaagctgt 240
actgaagcag ctaaagatac tttgaacaaa gctgccgacg cgactcagga agcggcagac 300
aaaatgaaag atgcccacaa ataa 324

<210> 820
<211> 107
<212> PRT
<213> Neisseria meningitidis

<400> 820
Met Lys Lys Leu Leu Ile Ala Ala Met Met Ala Ala Ala Leu Ala Ala
1 5 10 15

Cys Ser Gln Glu Ala Lys Gln Glu Val Lys Glu Ala Val Gln Ala Val
20 25 30

Glu Ser Asp Val Lys Asp Thr Ala Ala Ser Ala Ala Glu Ser Ala Ala
35 40 45

Ser Ala Val Glu Glu Ala Lys Asp Gln Val Lys Asp Ala Ala Ala Asp
50 55 60

Ala Lys Ala Ser Ala Glu Glu Ala Val Thr Glu Ala Lys Glu Ala Val
65 70 75 80

Thr Glu Ala Ala Lys Asp Thr Leu Asn Lys Ala Ala Asp Ala Thr Gln
85 90 95

Glu Ala Ala Asp Lys Met Lys Asp Ala Ala Lys
100 105

<210> 821
<211> 591
<212> DNA
<213> Neisseria gonorrhoeae

<400> 821

atggctgccg tatcgggcgg cggtgcggtc ttcctgataa tgcttccaca tattgccccgc 60

gttcagcgtc agccgccagc gttcgccccaa gcgtcgggag aaatcgcat tgaagccgcc 120
ggcaaatttgc tatcgctgc cggccaaaggat gtttgcggcc acaaaccggca cggtgccc 180
cgagcgcgtt accgaacgggt ttgtatggcc gaacgacagg cgcagggtct gttcgctgaa 240
atcttgta tcccaataat gcacgcccgc gctgtatgccc ccgttagagga aatgtatgccc 300
gcccgcattt atttcgccgc acacgccccaa gccgtagcgc aaaccgtgtg cctttgcgg 360
caggctgtcg gcgggtttcg tccagcttct gcccgcataat tcaatcggtt ttccggacga 420
agcgttggtt atagcgatt aacaaaatc aggacaaggc ggcggccgc aggcaagtacg 480
gatggtaacgg aaccgggtcg cccgggtctt ggacgcctta gggaccgtt cccttgagc 540
cggggcgggg caaccgtac cggttttgt tcacccgcca tattgtgtt a 591

<210> 822

<211> 196

<212> PRT

<213> Neisseria gonorrhoeae

<400> 822

Met Ala Ala Val Ser Gly Gly Ala Val Phe Leu Ile Met Leu Pro
1 5 10 15

His Ile Ala Arg Val Gln Arg Gln Pro Pro Ala Phe Ala Gln Ala Ser
20 25 30

Gly Glu Ile Gly Ile Glu Ala Ala Gly Glu Ile Val Ser Ala Ala Ala
35 40 45

Gln Glu Val Leu Pro Asp Lys Arg His Gly Ala Glu Arg Ala Arg Tyr
50 55 60

Arg Thr Val Leu Met Ala Glu Arg Gln Ala Gln Val Leu Phe Ala Glu
65 70 75 80

Ile Phe Val Ile Pro Ile Met His Ala Ala Ala Asp Ala Ala Val Glu
85 90 95

Glu Met Met Pro Ala Arg Ile Asp Phe Ala Arg His Ala Gln Ala Val
100 105 110

Ala Gln Thr Val Cys Leu Leu Arg Gln Ala Val Gly Gly Phe Arg Pro
115 120 125

Ala Ser Ala Arg Lys Phe Asn Arg Phe Phe Gly Arg Ser Val Val Tyr
130 135 140

Ser Gly Leu Thr Lys Ile Arg Thr Arg Arg Arg Ala Ala Gly Ser Thr
145 150 155 160

Asp Gly Thr Glu Pro Val Arg Pro Val Leu Gly Arg Leu Arg Glu Pro
165 170 175

Phe Pro Leu Ser Arg Gly Gly Ala Thr Arg Thr Gly Phe Cys Ser Ser
180 185 190

Ala Ile Leu Cys
195

<210> 823
<211> 482
<212> DNA
<213> Neisseria meningitidis

<400> 823
gctcaagcgt tgggagaaaat cggcattgaa gccgcgcacg aaattgtatac ggctgccgcc 60
taagagggtt tgctcgacaa acggcacat gccaacgag cgcgttaccc aacggttttt 120
atagccgaac gacaggcgca ggctctgttc gctgaaatct ttgttatccc aataatgcac 180
gccgcgcgcg ctgatgccgc ctagaggaa atgatgcctg cccgcattga ttgcgcga 240
cacgcctaag ccctagcgca aaccgtgtgc ctttgccgc aggctgtcgg cggtttcgt 300
ccagcttctg cccgcaaatt caatcgttt ttcggacgaa gcgttgcgttta tagcggatta 360
acaaaaaatca ggacaaggca acgaagccgc agacagtaca aatagtacgg aaccgattca 420
cttggtgctt cagcacctta gagaatcggtt ctctttttt ttcatccgtt atattgtgtt 480
ga 482

<210> 824
<211> 160
<212> PRT
<213> Neisseria meningitidis

<400> 824
Ala Gln Ala Leu Gly Glu Ile Gly Ile Glu Ala Ala Asp Glu Ile Val
1 5 10 15

Ser Ala Ala Ala Xaa Glu Val Leu Leu Asp Lys Arg His Asp Ala Glu
20 25 30

Arg Ala Arg Tyr Arg Thr Val Phe Ile Ala Glu Arg Gln Ala Gln Ala
35 40 45

Leu Phe Ala Glu Ile Phe Val Ile Pro Ile Met His Ala Ala Ala Ala
50 55 60

Asp Ala Ala Val Glu Glu Met Met Pro Ala Arg Ile Asp Phe Ala Arg
65 70 75 80

His Ala Xaa Ala Leu Ala Gln Thr Val Cys Leu Leu Arg Gln Ala Val
85 90 95

Gly Gly Phe Arg Pro Ala Ser Ala Arg Lys Phe Asn Arg Phe Phe Gly
100 105 110

Arg Ser Val Val Tyr Ser Gly Leu Thr Lys Ile Arg Thr Arg Gln Arg
115 120 125

Ser Ala Asp Ser Thr Asn Ser Thr Glu Pro Ile His Leu Val Leu Gln
130 135 140

His Leu Arg Glu Ser Arg Ser Leu Phe Cys Ser Ser Ala Ile Leu Cys
145 150 155 160

<210> 825
<211> 583
<212> DNA
<213> Neisseria meningitidis

<400> 825
atggctgtcg tatcgggcgg cgggtgcggtc ttccctgataa cgcttccaca tattgcccac 60
gttcagcgtc agccgcagg tcgctcaagc gtcgggagaa atcggcatcg aagccgcccga 120
cgaaattgtta tcggctgccc cctaagaggt tttgtcgat aaacggcaccg atgcgaaatg 180
agcgcgttac tgaacggttt ttatagccga gcgcacaggcg caggctctgt tcgctgaaat 240
cttggttatc ctaatagtgc acggccgcgc cgctgatgtc tccgttagagg aaatgatgcc 300
cgccccgcatt gatttccgcgc gacacgcccc a gccgtagcg caaacgtgt gcctttgcg 360
gcaggcgtgca ggcgggtttc gtccagcttc tgcctgcaaa ttcaatcggtt tttcggacg 420
aagcgttggtt tatagcggat taacaaaaat caggacaagg cgacgaagcg cagacagtac 480
agatagtagc acaccgattc acttggtgct tcagcacctt agagaatcgt ctcttgagc 540
taaggcgagg caacgcgtta ctggttttt ttcatccact ata 583

<210> 826
<211> 191
<212> PRT
<213> Neisseria meningitidis

<400> 826
Met Ala Val Val Ser Gly Gly Gly Ala Val Phe Leu Ile Thr Leu Pro
1 5 10 15

His Ile Ala His Val Gln Arg Gln Pro Pro Xaa Phe Ala Gln Ala Ser
20 25 30

Gly Glu Ile Gly Ile Glu Ala Ala Asp Glu Ile Val Ser Ala Ala Ala
35 40 45

Glu Val Leu Leu Asp Lys Arg His Asp Ala Glu Ala Arg Tyr Thr Val
50 55 60

Phe Ile Ala Glu Arg Gln Ala Gln Ala Leu Phe Ala Glu Ile Phe Val
65 70 75 80

Ile Leu Ile Val His Ala Ala Ala Asp Val Ser Val Glu Glu Met
85 90 95

Met Pro Ala Arg Ile Asp Phe Ala Arg His Ala Gln Ala Val Ala Gln
100 105 110

Thr Val Cys Leu Leu Arg Gln Ala Val Gly Gly Phe Arg Pro Ala Ser
115 120 125

Ala Cys Lys Phe Asn Arg Phe Phe Gly Arg Ser Val Val Tyr Ser Gly
130 135 140

Leu Thr Lys Ile Arg Thr Arg Arg Ser Ala Asp Ser Thr Asp Ser
145 150 155 160

Thr Glu Pro Ile His Leu Val Leu Gln His Leu Arg Glu Ser Ser Leu
165 170 175

Ala Lys Ala Arg Gln Arg Arg Thr Gly Phe Cys Ser Ser Thr Ile
180 185 190

<210> 827
<211> 1173
<212> DNA
<213> Neisseria gonorrhoeae

<400> 827
atgttccatt ccatcgaaaa atacagaaca cccgccaag tcttatttagg cctgattgca 60
ttaactttg tcggcttcgg cgtcagcacg gtttccatc cgggcgccga ctacatcg 120
caagtggcg acgaaaaaat cagcgagcac tcaatcaaca acgccatgca gaacgagcag 180
gcggacggcg gcagcccttgc ggcgcacg 240
ctgaaacagg ggcgaaagct gatgggcatt tcggttctt ccgaacaat caagcagatg 300
atttgtggacg atcccaattt ccacgacgca aacggcaa at tca gtc acgc gtc gctttgagt 360
caatacctgt cgcaacgcca tatgtctgaa gaccagtttgc tca gagaat 420
tttgccttgc agaatttgg aagcctcg 480
gcggaaacago tgatcaggct gacgcagg 540
cccacgact tcacgc 600
gcgaacaaaa aagactatct gctgccc 660
ctgaaggatt ttgcagacaa gcagaccg 720
gagcgcgtgg cgcgttgc 780
gcgcgtc 840
aagctggcg acgatgcgtt caatcatccc tccctcg 900
gtttgaaag tggaaaccc 960
atgcccggaa acctaata 1020
tccgaagtgc tgaccatcaa 1080
gaagaaaaaa acctactgtt tgaagaagcc 1140
accgaagccg 1173
ccaaactttt gaaaacaatg taa

<210> 828
<211> 390
<212> PRT
<213> Neisseria gonorrhoeae

<400> 828
Met Phe His Ser Ile Glu Lys Tyr Arg Thr Pro Ala Gln Val Leu Leu
1 5 10 15

Gly Leu Ile Ala Leu Thr Phe Val Gly Phe Gly Val Ser Thr Val Ser
20 25 30

His Pro Gly Ala Asp Tyr Ile Val Gln Val Gly Asp Glu Lys Ile Ser
35 40 45

Glu His Ser Ile Asn Asn Ala Met Gln Asn Glu Gln Ala Asp Gly Gly
50 55 60

Ser Pro Trp Arg Asp Ala Val Phe Gln Ser Leu Leu Gln Arg Ala Tyr
65 70 75 80

Leu Lys Gln Gly Ala Lys Leu Met Gly Ile Ser Val Ser Ser Glu Gln
85 90 95

Ile Lys Gln Met Ile Val Asp Asp Pro Asn Phe His Asp Ala Asn Gly
100 105 110

Lys Phe Ser His Ala Leu Leu Ser Gln Tyr Leu Ser Gln Arg His Met
115 120 125

Ser Glu Asp Gln Phe Val Glu Glu Ile Arg Asp Gln Phe Ala Leu Gln
130 135 140

Asn Leu Val Ser Leu Val Gln Asn Gly Val Leu Val Gly Asp Ala Gln
145 150 155 160

Ala Glu Gln Leu Ile Arg Leu Thr Gln Val Asn Arg Thr Ile Arg Ser
165 170 175

His Thr Phe Asn Pro Asp Glu Phe Ile Ala Gln Val Lys Ala Ser Glu
180 185 190

Ala Asp Leu Gln Lys Phe Tyr Asn Ala Asn Lys Lys Asp Tyr Leu Leu
195 200 205

Pro Gln Ala Val Lys Leu Glu Tyr Val Ala Leu Asn Leu Lys Asp Phe
210 215 220

Ala Asp Lys Gln Thr Val Ser Glu Thr Glu Val Lys Asn Ala Phe Glu
225 230 235 240

Glu Arg Val Ala Arg Leu Pro Ala His Glu Ala Lys Pro Ser Phe Glu
245 250 255

Gln Glu Lys Ala Ala Val Glu Asn Glu Leu Lys Met Lys Lys Ala Val
260 265 270

Ala Asp Phe Asn Lys Ala Lys Glu Lys Leu Gly Asp Asp Ala Phe Asn
275 280 285

His Pro Ser Ser Leu Ala Glu Ala Ala Lys Asn Ser Gly Leu Lys Val
290 295 300

Glu Thr Gln Glu Thr Trp Leu Ser Arg Gln Asp Ala Gln Met Ser Gly
305 310 315 320

Met Pro Glu Asn Leu Ile Asn Ala Val Phe Ser Asp Asp Val Leu Lys
325 330 335

Lys Lys His Asn Ser Glu Val Leu Thr Ile Asn Ser Glu Thr Ala Trp
340 345 350

Val Val Arg Ala Lys Glu Val Arg Glu Glu Lys Asn Leu Leu Phe Glu
355 360 365

Glu Ala Lys Asp Ala Val Arg Gln Ala Tyr Ile Arg Thr Glu Ala Ala
370 375 380

Lys Leu Leu Lys Thr Met
385 390

<210> 829
<211> 1156
<212> DNA
<213> Neisseria meningitidis

<400> 829
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gcggacggcg gcggcccttc gccgacgcgg tggccaatc cctgctgcaa cgccctacc 240
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tcgtggacga tcccaatttc cacgacgcaa acggcaaattt cgaccacgcg cttttaacc 360
gctaccttc ccaacgccc atgtctgaag accagttgt cgaagaaatc cgcgatcagt 420
ttgccttgca gaatttgta aacctcgtcc aaaacggcgt attggcgcg gacgcgcagg 480
cggaacagct gatcaggctg acacaggtca accgcaccat cggccgcac acttcaacc 540
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cgaacaaaaaa agactatctg ctgcccgcagg cggtaaaattt gaaatatgtc gccttgaatc 660
tgaaggattt tgccgacaag cagaccgtca gtgaaacgga agtggaaaat gcattgaag 720
agcgcgtggc gcgttgcgg gcaaatgaag ccaaccccttc ttgcagcag gaaaaagccg 780
ccgtcgaaaaa cgaattgaaa atgaaaaagg cggccgcga cttcaacaag gcaaaagaaa 840
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gcccggaaaaac ctgatcaatg cogtatttcg cgacgacgta ttgaagaaaa aacacaattc 1020
cgaagtgc当地 accatcaaca gogaaaaccgc gtggcgc当地 cgc当地aaag aagtccgc当地 1080
agagaaaaacc ctgcccgttg cccgaaagccaa agacgc当地 cgtcaggctt atatccgtac 1140
cgaagccgccc aaactt 1156

<210> 830
<211> 386
<212> PRT
<213> Neisseria meningitidis

<400> 830
Met Phe His Ser Ile Glu Lys Tyr Arg Thr Pro Ala Gln Val Leu Leu
1 5 10 15

Gly Leu Ile Ala Leu Thr Phe Val Gly Phe Gly Val Ser Thr Val Ser
20 25 30

His Pro Gly Ala Asp Tyr Ile Val Gln Val Gly Asp Glu Lys Ile Ser
35 40 45

Asp His Ser Ile Asn Asn Ala Ile Gln Asn Glu Gln Ala Asp Gly Gly
50 55 60

Gly Pro Ser Pro Asp Ala Val Phe Gln Ser Leu Leu Gln Arg Ala Tyr
65 70 75 80

Leu Lys Gln Gly Ala Lys Leu Met Gly Ile Ser Val Ser Ser Glu Gln
85 90 95

Ile Lys Gln Ile Ile Val Asp Asp Pro Asn Phe His Asp Ala Asn Gly
100 105 110

Lys Phe Asp His Ala Leu Leu Asn Arg Tyr Leu Ser Gln Arg His Met
115 120 125

Ser Glu Asp Gln Phe Val Glu Glu Ile Arg Asp Gln Phe Ala Leu Gln
130 135 140

Asn Leu Val Asn Leu Val Gln Asn Gly Val Leu Val Gly Asp Ala Gln
145 150 155 160

Ala Glu Gln Leu Ile Arg Leu Thr Gln Val Asn Arg Thr Ile Arg Ser
165 170 175

His Thr Phe Asn Pro Asp Glu Phe Ile Ala Gln Val Lys Val Ser Glu
180 185 190

Ala Asp Leu Gln Lys Phe Tyr Asn Ala Asn Lys Lys Asp Tyr Leu Leu
195 200 205

Pro Gln Ala Val Lys Leu Glu Tyr Val Ala Leu Asn Leu Lys Asp Phe
210 215 220

Ala Asp Lys Gln Thr Val Ser Glu Thr Glu Val Lys Asn Ala Phe Glu
225 230 235 240

Glu Arg Val Ala Arg Leu Pro Ala Asn Glu Ala Lys Pro Ser Phe Glu
245 250 255

Gln Glu Lys Ala Ala Val Glu Asn Glu Leu Lys Met Lys Lys Ala Val
260 265 270

Ala Asp Phe Asn Lys Ala Lys Glu Lys Leu Gly Asp Asp Ala Val Asn
275 280 285

His Pro Ser Ser Leu Ala Glu Ala Ala Lys Asn Ser Gly Leu Lys Val
290 295 300

Glu Thr Gln Glu Thr Trp Leu Ser Arg Gln Asp Ala Gln Met Ser Gly
305 310 315 320

Met Pro Glu Asn Leu Ile Asn Ala Val Phe Ser Asp Asp Val Leu Lys
325 330 335

Lys Lys His Asn Ser Glu Val Leu Thr Ile Asn Ser Glu Thr Ala Trp
340 345 350

Val Val Arg Ala Lys Glu Val Arg Glu Glu Lys Thr Leu Pro Phe Ala
355 360 365

Glu Ala Lys Asp Ala Val Arg Gln Ala Tyr Ile Arg Thr Glu Ala Ala
370 375 380

Lys Leu
385

<210> 831
<211> 1158

<212> DNA

<213> Neisseria meningitidis

<400> 831

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caagtggcg acgaaaaaat cagcgaccac tccatcaaca acgcataca gaacgaacag 180
gcggacggcg gcggcccttc gcgcgacacg gtgttccaat ccctgtaca acgcgcctac 240
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cgctacctt cccaaacgtca tatgtctgaa gaccagttt tcgaagaaaat ccgcgatcag 420
tttgccttgc agaatttggt aaacctcgac caaaacggcg tattggtcgg cgacgcgcag 480
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cccgacgaaat tcatcgccca agtcaaagt tctgaagccg atttgcagaa gtttataaac 600
gcaaaacaaa aagactacct gcttcccaa gcggtcaaatt tggaaatatgt cgcctgaat 660
ctgaaagact ttgcagacaa acagacccgtc agcgaacacag aagtggaaaaa tgcgttggaa 720
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accgaagccg ccaaactt 1158

<210> 832

<211> 386

<212> PRT

<213> Neisseria meningitidis

<400> 832

Met Phe His Ser Ile Glu Lys Tyr Arg Thr Pro Ala Gln Val Leu Leu
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Gly Leu Ile Ala Leu Thr Phe Val Gly Phe Gly Val Ser Thr Val Ser
20 25 30

His Pro Gly Ala Asp Tyr Ile Val Gln Val Gly Asp Glu Lys Ile Ser
35 40 45

Asp His Ser Ile Asn Asn Ala Ile Gln Asn Glu Gln Ala Asp Gly Gly
50 55 60

Gly Pro Ser Arg Asp Ala Val Phe Gln Ser Leu Leu Gln Arg Ala Tyr
65 70 75 80

Leu Lys Gln Gly Ala Lys Leu Met Gly Ile Ser Val Ser Ser Glu Gln
85 90 95

Ile Lys Gln Ile Ile Val Asp Asp Pro Asn Phe His Asp Ala Asn Gly
100 105 110

Lys Phe Asp His Ala Leu Leu Asn Arg Tyr Leu Ser Gln Arg His Met
115 120 125

Ser Glu Asp Gln Phe Val Glu Glu Ile Arg Asp Gln Phe Ala Leu Gln
130 135 140

Asn Leu Val Asn Leu Val Gln Asn Gly Val Leu Val Gly Asp Ala Gln
145 150 155 160

Ala Glu Gln Leu Ile Arg Leu Thr Gln Val Asn Arg Thr Ile Arg Ser
165 170 175

His Thr Phe Asn Pro Asp Glu Phe Ile Ala Gln Val Lys Val Ser Glu
180 185 190

Ala Asp Leu Gln Lys Phe Tyr Asn Ala Asn Lys Lys Asp Tyr Leu Leu
195 200 205

Pro Lys Ala Val Lys Leu Glu Tyr Val Ala Leu Asn Leu Lys Asp Phe
210 215 220

Ala Asp Lys Gln Thr Val Ser Glu Thr Glu Val Lys Asn Ala Phe Glu
225 230 235 240

Glu Arg Val Ala Arg Leu Pro Ala Asn Glu Ala Lys Pro Ser Phe Glu
245 250 255

Gln Glu Lys Ala Ala Val Glu Asn Glu Leu Lys Met Lys Ala Val
260 265 270

Ala Asp Phe Asn Lys Ala Lys Glu Lys Leu Gly Asp Asp Ala Phe Asn
275 280 285

His Pro Ser Ser Leu Ala Glu Ala Ala Lys Asn Ser Gly Leu Lys Val
290 295 300

Glu Thr Gln Glu Thr Trp Leu Ser Arg Gln Asp Ala Gln Met Ser Gly
305 310 315 320

Met Pro Glu Asn Leu Ile Asn Ala Val Phe Ser Asp Asp Val Leu Lys
325 330 335

Lys Lys His Asn Ser Glu Val Leu Thr Ile Asn Ser Glu Thr Ala Trp
340 345 350

Val Val Arg Ala Lys Glu Val Arg Glu Glu Lys Thr Leu Pro Phe Ala
355 360 365

Glu Ala Lys Asp Ala Val Arg Gln Ala Tyr Ile Arg Thr Glu Ala Ala
370 375 380

Lys Leu
385

<210> 833
<211> 1539
<212> DNA
<213> Neisseria gonorrhoeae

<400> 833

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aaaggagcac aatcggttga caacggcgat ggtcagtaa 1539

<210> 834

<211> 512

<212> PRT

<213> Neisseria gonorrhoeae

<400> 834

Met Phe His Ser Ile Glu Lys Tyr Arg Thr Pro Ala Gln Val Leu Leu
1 5 10 15

Gly Leu Ile Ala Leu Thr Phe Val Gly Phe Gly Val Ser Thr Val Ser
20 25 30

His Pro Gly Ala Asp Tyr Ile Val Gln Val Gly Asp Glu Lys Ile Ser
35 40 45

Glu His Ser Ile Asn Asn Ala Met Gln Asn Glu Gln Ala Asp Gly Gly
50 55 60

Ser Pro Trp Arg Asp Ala Val Phe Gln Ser Leu Leu Gln Arg Ala Tyr
65 70 75 80

Leu Lys Gln Gly Ala Lys Leu Met Gly Ile Ser Val Ser Ser Glu Gln
85 90 95

Ile Lys Gln Met Ile Val Asp Asp Pro Asn Phe His Asp Ala Asn Gly
100 105 110

Lys Phe Ser His Ala Leu Leu Ser Gln Tyr Leu Ser Gln Arg His Met
115 120 125

Ser Glu Asp Gln Phe Val Glu Glu Ile Arg Asp Gln Phe Ala Leu Gln
130 135 140

Asn Leu Val Ser Leu Val Gln Asn Gly Val Leu Val Gly Asp Ala Gln
145 150 155 160

Ala Glu Gln Leu Ile Arg Leu Thr Gln Val Asn Arg Thr Ile Arg Ser
165 170 175

His Thr Phe Asn Pro Asp Glu Phe Ile Ala Gln Val Lys Ala Ser Glu
180 185 190

Ala Asp Leu Gln Lys Phe Tyr Asn Ala Asn Lys Lys Asp Tyr Leu Leu
195 200 205

Pro Gln Ala Val Lys Leu Glu Tyr Val Ala Leu Asn Leu Lys Asp Phe
210 215 220

Ala Asp Lys Gln Thr Val Ser Glu Thr Glu Val Lys Asn Ala Phe Glu
225 230 235 240

Glu Arg Val Ala Arg Leu Pro Ala His Glu Ala Lys Pro Ser Phe Glu
245 250 255

Gln Glu Lys Ala Ala Val Glu Asn Glu Leu Lys Met Lys Lys Ala Val
260 265 270

Ala Asp Phe Asn Lys Ala Lys Glu Lys Leu Gly Asp Asp Ala Phe Asn
275 280 285

His Pro Ser Ser Leu Ala Glu Ala Ala Lys Asn Ser Gly Leu Lys Val
290 295 300

Glu Thr Gln Glu Thr Trp Leu Ser Arg Gln Asp Ala Gln Met Ser Gly
305 310 315 320

Met Pro Glu Asn Leu Ile Asn Ala Val Phe Ser Asp Asp Val Leu Lys
325 330 335

Lys Lys His Asn Ser Glu Val Leu Thr Ile Asn Ser Glu Thr Ala Trp
340 345 350

Val Val Arg Ala Lys Glu Val Arg Glu Glu Lys Asn Leu Leu Phe Glu
355 360 365

Glu Ala Lys Asp Ala Val Arg Gln Ala Tyr Ile Arg Thr Glu Ala Ala
370 375 380

Lys Leu Ala Glu Asn Lys Ala Lys Glu Val Leu Thr Gln Leu Asn Gly
385 390 395 400

Gly Lys Ala Val Asp Val Lys Trp Ser Glu Val Ser Val Leu Gly Ala
405 410 415

Gln Gln Ala Arg Gln Ser Met Pro Pro Glu Ala Tyr Ala Glu Leu Leu
420 425 430

Lys Ala Lys Pro Ala Asn Gly Lys Pro Ala Tyr Val Arg Leu Thr Gly
435 440 445

Leu Pro Ala Pro Val Ile Val Glu Ala Gln Ala Val Thr Pro Pro Glu
450 455 460

Asp Ile Ala Ala Gln Leu Pro Pro Ala Lys Gln Ala Leu Ala Gln Gln
465 470 475 480

Gln Ser Ala Asn Thr Phe Asp Leu Leu Ile Arg Tyr Phe Asn Gly Lys
485 490 495

Ile Lys Gln Thr Lys Gly Ala Gln Ser Val Asp Asn Gly Asp Gly Gln
500 505 510

<210> 835

<211> 1539

<212> DNA

<213> Neisseria meningitidis

<400> 835

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cagtctgcca atacttcga cttgttata cgtttattca acggcaaaat caaacagacc 1500
aaaggagcgc aatcggcgtca caacggcgcac ggtcagtaa 1539

<210> 836
<211> 512
<212> PRT
<213> Neisseria meningitidis

<400> 836

Met Phe His Ser Ile Glu Lys Tyr Arg Thr Pro Ala Gln Val Leu Leu
1 5 10 15

Gly Leu Ile Ala Leu Thr Phe Val Gly Phe Gly Val Ser Thr Val Ser
20 25 30

His Pro Gly Ala Asp Tyr Ile Val Gln Val Gly Asp Glu Lys Ile Ser
35 40 45

Asp His Ser Ile Asn Asn Ala Ile Gln Asn Glu Gln Ala Asp Gly Gly
50 55 60

Gly Pro Ser Arg Asp Ala Val Phe Gln Ser Leu Leu Gln Arg Ala Tyr
65 70 75 80

Leu Lys Gln Gly Ala Lys Leu Met Gly Ile Ser Val Ser Ser Glu Gln
85 90 95

Ile Lys Gln Ile Ile Val Asp Asp Pro Asn Phe His Asp Ala Asn Gly
100 105 110

Lys Phe Asp His Ala Leu Leu Asn Arg Tyr Leu Ser Gln Arg His Met
115 120 125

Ser Glu Asp Gln Phe Val Glu Glu Ile Arg Asp Gln Phe Ala Leu Gln
130 135 140

Asn Leu Val Asn Leu Val Gln Asn Gly Val Leu Val Gly Asp Ala Gln
145 150 155 160

Ala Glu Gln Leu Ile Arg Leu Thr Gln Val Asn Arg Thr Ile Arg Ser
165 170 175

His Thr Phe Asn Pro Asp Glu Phe Ile Ala Gln Val Lys Val Ser Glu
180 185 190

Ala Asp Leu Gln Lys Phe Tyr Asn Ala Asn Lys Lys Asp Tyr Leu Leu
195 200 205

Pro Gln Ala Val Lys Leu Glu Tyr Val Ala Leu Asn Leu Lys Asp Phe
210 215 220

Ala Asp Lys Gln Thr Val Ser Glu Thr Glu Val Lys Asn Ala Phe Glu
225 230 235 240

Glu Arg Val Ala Arg Leu Pro Ala Asn Glu Ala Lys Pro Ser Phe Glu
245 250 255

Gln Glu Lys Ala Ala Val Glu Asn Glu Leu Lys Met Lys Lys Ala Val
260 265 270

Ala Asp Phe Asn Lys Ala Lys Glu Lys Leu Gly Asp Asp Ala Phe Asn
 275 280 285
 His Pro Ser Ser Leu Ala Glu Ala Ala Lys Asn Ser Gly Leu Lys Val
 290 295 300
 Glu Thr Gln Glu Thr Trp Leu Ser Arg Gln Asp Ala Gln Met Ser Gly
 305 310 315 320
 Met Pro Glu Asn Leu Ile Asn Ala Val Phe Ser Asp Asp Val Leu Lys
 325 330 335
 Lys Lys His Asn Ser Glu Val Leu Thr Ile Asn Ser Glu Thr Ala Trp
 340 345 350
 Val Val Arg Ala Lys Glu Val Arg Glu Glu Lys Thr Leu Pro Phe Ala
 355 360 365
 Glu Ala Lys Asp Ala Val Arg Gln Ala Tyr Ile Arg Thr Glu Ala Ala
 370 375 380
 Lys Leu Ala Glu Asn Lys Ala Lys Asp Val Leu Thr Gln Leu Asn Gly
 385 390 395 400
 Gly Lys Ala Val Asp Val Lys Trp Ser Glu Val Ser Val Leu Gly Ala
 405 410 415
 Gln Gln Ala Arg Gln Ser Met Pro Pro Glu Ala Tyr Ala Glu Leu Leu
 420 425 430
 Lys Ala Lys Pro Ala Asn Gly Lys Pro Ala Tyr Val Arg Leu Ile Gly
 435 440 445
 Leu Pro Ala Pro Val Ile Val Glu Val Gln Ala Val Thr Pro Pro Asp
 450 455 460
 Asp Ile Ala Ala Gln Leu Pro Leu Ala Lys Gln Ala Leu Ala Gln Gln
 465 470 475 480
 Gln Ser Ala Asn Thr Phe Asp Leu Leu Ile Arg Tyr Phe Asn Gly Lys
 485 490 495
 Ile Lys Gln Thr Lys Gly Ala Gln Ser Val Asp Asn Gly Asp Gly Gln
 500 505 510

<210> 837
 <211> 1539
 <212> DNA
 <213> Neisseria meningitidis

<400> 837
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 cccgacgaat tcacgcacca agtcaaagtg tctgaagccg atttgcagaa gttttataac 600
 gcaaaacaaaaa aagactacct gcttcccaaa gcggtcaaat tggaaatatgt cgccttgaat 660
 ctgaaagact ttgcagacaa acagaccgtc agcgaacacag aagtaaaaa tgcgtttgaa 720
 gagcgcgtgg cgcgttgcgc ggcaaatgaa gccaaacctt ctttcgaga ggaaaaagcc 780
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 cagtccatgc cggccggcgtt ctgctgaaag cggaaaaccgcgaa aacggcaaaa 1320
 cccgcctacg tcaggctgat cggctgcgcgc gcacccgtga ttgtcgaagt acaggctgta 1380
 accccgcgg atgatatcgc cgcacagctt ccgcttgcac aacaggctt ggcgaacag 1440
 cagtctgcacca atacttcga cttgttgata cgttatttca acggcaaaat caaacagacc 1500
 aaaggagcgc aatcggtcga caacggcgac ggtcagtaa 1539

<210> 838

<211> 512

<212> PRT

<213> Neisseria meningitidis

<400> 838

Met	Phe	His	Ser	Ile	Glu	Lys	Tyr	Arg	Thr	Pro	Ala	Gln	Val	Leu	Leu
1				5					10					15	

Gly	Leu	Ile	Ala	Leu	Thr	Phe	Val	Gly	Phe	Gly	Val	Ser	Thr	Val	Ser
								20				25			30

His	Pro	Gly	Ala	Asp	Tyr	Ile	Val	Gln	Val	Gly	Asp	Glu	Lys	Ile	Ser
								35			40			45	

Asp	His	Ser	Ile	Asn	Asn	Ala	Ile	Gln	Asn	Glu	Gln	Ala	Asp	Gly	Gly
								50			55			60	

Gly	Pro	Ser	Arg	Asp	Ala	Val	Phe	Gln	Ser	Leu	Leu	Gln	Arg	Ala	Tyr
								65			70			75	80

Leu	Lys	Gln	Gly	Ala	Lys	Leu	Met	Gly	Ile	Ser	Val	Ser	Ser	Glu	Gln
								85			90			95	

Ile	Lys	Gln	Ile	Ile	Val	Asp	Asp	Pro	Asn	Phe	His	Asp	Ala	Asn	Gly
								100			105			110	

Lys	Phe	Asp	His	Ala	Leu	Leu	Asn	Arg	Tyr	Leu	Ser	Gln	Arg	His	Met
								115			120			125	

Ser	Glu	Asp	Gln	Phe	Val	Glu	Glu	Ile	Arg	Asp	Gln	Phe	Ala	Leu	Gln
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

/

130	135	140	
Asn Leu Val Asn Leu Val Gln Asn Gly Val Leu Val Gly Asp Ala Gln			
145	150	155	160
Ala Glu Gln Leu Ile Arg Leu Thr Gln Val Asn Arg Thr Ile Arg Ser			
165	170	175	
His Thr Phe Asn Pro Asp Glu Phe Ile Ala Gln Val Lys Val Ser Glu			
180	185	190	
Ala Asp Leu Gln Lys Phe Tyr Asn Ala Asn Lys Lys Asp Tyr Leu Leu			
195	200	205	
Pro Lys Ala Val Lys Leu Glu Tyr Val Ala Leu Asn Leu Lys Asp Phe			
210	215	220	
Ala Asp Lys Gln Thr Val Ser Glu Thr Glu Val Lys Asn Ala Phe Glu			
225	230	235	240
Glu Arg Val Ala Arg Leu Pro Ala Asn Glu Ala Lys Pro Ser Phe Glu			
245	250	255	
Gln Glu Lys Ala Ala Val Glu Asn Glu Leu Lys Met Lys Lys Ala Val			
260	265	270	
Ala Asp Phe Asn Lys Ala Lys Glu Lys Leu Gly Asp Asp Ala Phe Asn			
275	280	285	
His Pro Ser Ser Leu Ala Glu Ala Ala Lys Asn Ser Gly Leu Lys Val			
290	295	300	
Glu Thr Gln Glu Thr Trp Leu Ser Arg Gln Asp Ala Gln Met Ser Gly			
305	310	315	320
Met Pro Glu Asn Leu Ile Asn Ala Val Phe Ser Asp Asp Val Leu Lys			
325	330	335	
Lys Lys His Asn Ser Glu Val Leu Thr Ile Asn Ser Glu Thr Ala Trp			
340	345	350	
Val Val Arg Ala Lys Glu Val Arg Glu Glu Lys Thr Leu Pro Phe Ala			
355	360	365	
Glu Ala Lys Asp Ala Val Arg Gln Ala Tyr Ile Arg Thr Glu Ala Ala			
370	375	380	
Lys Leu Ala Glu Asn Lys Ala Lys Asp Val Leu Thr Gln Leu Asn Gly			
385	390	395	400
Gly Lys Ala Val Asp Val Lys Trp Ser Glu Val Ser Val Leu Gly Ala			
405	410	415	
Gln Gln Ala Arg Gln Ser Met Pro Pro Glu Ala Tyr Ala Glu Leu Leu			
420	425	430	
Lys Ala Lys Pro Ala Asn Gly Lys Pro Ala Tyr Val Arg Leu Ile Gly			

435

440

445

Leu Pro Ala Pro Val Ile Val Glu Val Gln Ala Val Thr Pro Pro Asp
450 455 460

Asp Ile Ala Ala Gln Leu Pro Leu Ala Lys Gln Ala Leu Ala Gln Gln
465 470 475 480

Gln Ser Ala Asn Thr Phe Asp Leu Leu Ile Arg Tyr Phe Asn Gly Lys
485 490 495

Ile Lys Gln Thr Lys Gly Ala Gln Ser Val Asp Asn Gly Asp Gly Gln
500 505 510

<210> 839

<211> 906

<212> DNA

<213> Neisseria gonorrhoeae

<400> 839

atgtcaaaac gaaaatccat aaaccgtccg tatcaaaaac cggcggaact gccgccgttg 60
caaataatc cgccattta cctaaaaac cgccgcctga actttttat cgcggcagac 120
ggcggttgcg cgtctccgca aaaatgcagg gcgcgcgggtt ttcagacggc atttgcgcgtt 180
caaggccgtg cggtgtctt accaaatgcc caaccattcg cccacggaat ccatccaatc 240
cttattgccc ccgcgcgtcc tgccctcccg gcggtacgcc cacggcgctt gcggattttt 300
agctttccac aatcccttgc gttcccttgc cgcctgaatt tgagcgtcgg catagtcggc 360
aaaatccgc ttatcctgct gttcttagc ataacttta taatgccacg ccgcggccgtc 420
ctgcacctgc atcaggttca aatcggtttt gccggcgat acctgcgccta cttcgcgctg 480
atagcggtcg gtttcaaaca cacgtacact gacttccta ccctccgcgg ccgcgcgcag 540
gttgcgcgcgcaacgtgtac cgtaaagcctg tttcatctcc ggtgcgtcga tatacgcct 600
ccgaatttta tgttcgcgc cgtcgccgtc gatgacgtga agggtatcgc cgtcatagac 660
tttggacacc gtgcctgtgt agctgtggcc ggatttcgccc gatgcccgtc ggcgaacggg 720
cgcgtcgaaa cccacgtccc ctgcagtgcc gagtacgtcg agtacggcaa ccgcggccgtcc 780
caccgcctca ctgtcatatc ccgtataacc caacgcgcggc aaaagcgaca gggcgacggg 840
aagccatttc atgattttt taatctgcat attttcaaa tgccgatgcc gtctgaacat 900
ctctga 906

<210> 840

<211> 301

<212> PRT

<213> Neisseria gonorrhoeae

<400> 840

Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu
1 5 10 15

Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg
20 25 30

Leu Asn Phe Phe Ile Ala Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys
35 40 45

Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Gly Arg Ala
50 55 60

Val Ser Leu Pro Asn Ala Gln Pro Phe Ala His Gly Ile His His Pro Ile
65 70 75 80

Leu Ile Ala Pro Ala Ala Pro Ala Cys Pro Ala Val Arg Pro Arg Arg
85 90 95

Leu Arg Ile Phe Ser Phe Pro Gln Ser Phe Ala Phe Pro Phe Arg Leu
100 105 110

Asn Leu Ser Val Gly Ile Val Gly Lys Ile Arg Leu Ile Leu Leu Phe
115 120 125

Phe Ser Ile Thr Phe Ile Met Pro Arg Arg Pro Val Leu His Leu His
130 135 140

Gln Val Gln Ile Gly Phe Ala Gly Gly Tyr Leu Arg His Phe Ala Leu
145 150 155 160

Ile Ala Val Gly Phe Lys His Thr Tyr Thr Asp Phe Pro Thr Leu Arg
165 170 175

Arg Arg Ala Gln Val Val Ala Arg Thr Cys Thr Val Ser Leu Phe His
180 185 190

Leu Arg Cys Val Asp Ile Arg His Pro Asn Phe Met Phe Arg Ala Val
195 200 205

Ala Val Asp Asp Val Lys Gly Ile Ala Val Ile Asp Phe Gly His Arg
210 215 220

Ala Cys Val Ala Val Ala Gly Phe Arg Arg Cys Pro Ser Ala Asn Gly
225 230 235 240

Arg Val Glu Thr His Val Pro Cys Ser Ala Glu Tyr Val Glu Tyr Gly
245 250 255

Asn Arg Arg Pro His Arg Leu Thr Val Ile Ser Arg Ile Thr Gln Arg
260 265 270

Ala Gln Lys Arg Gln Gly Asp Gly Lys Pro Phe His Asp Phe Phe Asn
275 280 285

Leu His Ile Phe Gln Met Pro Met Pro Ser Glu His Leu
290 295 300

<210> 841

<211> 222

<212> DNA

<213> Neisseria meningitidis

<400> 841

atgtcaaaac gaaaatccat aaaccgtccg tatcaaaaac cggcggact gccgccgtt 60
caaaaataatc cgccattta ccgtaaaaac cgccgcctga actttttat cgccggcagac 120

ggcgggttgcg cgtctccgca aaaatgcagg ggcgcgggtt ttcagacggc atttgcgtt 180
caaagccgtg cggtgtcttt accaaatgcc caaccattcg gc 222

<210> 842
<211> 74
<212> PRT
<213> Neisseria meningitidis

<400> 842
Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu
1 5 10 15

Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg
20 25 30

Leu Asn Phe Phe Ile Ala Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys
35 40 45

Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Ser Arg Ala
50 55 60

Val Ser Leu Pro Asn Ala Gln Pro Phe Gly
65 70

<210> 843
<211> 903
<212> DNA
<213> Neisseria meningitidis

<400> 843
atgtcaaaac gaaaatccat aaaccgtccg tatcaaaaac cggcggact gccgcccgtt 60
caaaaataatc cgccatttttta ccgtaaaaac cgccgcctga acttttttat cgnggcagac 120
ggcgggttgcg cgtctccgca aaaatgcagg ggcgcgggtt ttcagacggc atttgcgtt 180
caaagccgtg cggtgtcttt accaaatgcc caaccattcg cccacggcat ccatccaatc 240
cttattgccc ccgcgcgtcc tgccctgccc gcggtacgccc cacggcgctt gcggattttt 300
agctttccac aatcccttgc gttcccttgc cgcctgaatt tgagcgtcgg cataatcgcc 360
aaaatccgcc ttatcctgct gttcttagc ataactttta taatgccacg ccgccccgtc 420
ctgcacccgtc atcaggttca aatcggtttt gccgacagaa acctgcgcaca cttcgcgtc 480
gtagcggtcg gtgtcgaaca cgcggacgct gactttcctg cttccgcggc ccgcgcgcag 540
gttgcgcgc gaacgcgtgc cgtaagcctg tttcatctcc ggcgcgtcga tatacgccat 600
ccggattttt tgtttcgcgc cgtcgcgcgtc gataacgtga aggggtgtcgc cgtcatagac 660
tttggacacc gtgcctgtgt agcggtggcc ggatttcgccc gatgctcggc ggcgggcggg 720
cgcgtcgaaa cccgcgtccc ctgcccgcgc gagtacgtcg agtacggcaa ccgcgtccg 780
caccgcctcg ctgcccgtacc ccgtataacc caacgcaccc aaaagcgaca aggcgacggg 840
aagccatttc atgatttttt taatctgcat attttcaaa tgccgatgcc gtctgaacat 900
atc 903

<210> 844
<211> 301
<212> PRT
<213> Neisseria meningitidis

<400> 844
Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu

1	5	10	15
Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg			
20	25	30	
Leu Asn Phe Phe Ile Xaa Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys			
35	40	45	
Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Ser Arg Ala			
50	55	60	
Val Ser Leu Pro Asn Ala Gln Pro Phe Ala His Gly Ile His Pro Ile			
65	70	75	80
Leu Ile Ala Pro Ala Ala Pro Ala Cys Pro Ala Val Arg Pro Arg Arg			
85	90	95	
Leu Arg Ile Phe Ser Phe Pro Gln Ser Phe Ala Phe Pro Phe Arg Leu			
100	105	110	
Asn Leu Ser Val Gly Ile Ile Gly Lys Ile Arg Leu Ile Leu Leu Phe			
115	120	125	
Phe Ser Ile Thr Phe Ile Met Pro Arg Arg Pro Val Leu His Leu His			
130	135	140	
Gln Val Gln Ile Gly Phe Ala Asp Arg Asn Leu Arg His Phe Ala Leu			
145	150	155	160
Val Ala Val Gly Val Glu His Ala Asp Ala Asp Phe Pro Ala Phe Arg			
165	170	175	
Arg Arg Ala Gln Val Val Ala Arg Thr Arg Ala Val Ser Leu Phe His			
180	185	190	
Leu Arg Arg Val Asp Ile Arg His Pro Asp Phe Val Phe Arg Ala Val			
195	200	205	
Ala Val Asp Asn Val Lys Gly Val Ala Val Ile Asp Phe Gly His Arg			
210	215	220	
Ala Cys Val Ala Val Ala Gly Phe Arg Arg Cys Ser Ala Ala Gly Gly			
225	230	235	240
Arg Val Gly Thr Arg Val Pro Cys Arg Ala Glu Tyr Val Glu Tyr Gly.			
245	250	255	
Asn Arg Arg Pro His Arg Leu Ala Ala Val Pro Arg Ile Thr Gln Arg			
260	265	270	
Thr Gln Lys Arg Gln Gly Asp Gly Lys Pro Phe His Asp Phe Phe Asn			
275	280	285	
Leu His Ile Phe Gln Met Pro Met Pro Ser Glu His Ile			
290	295	300	

<210> 845
<211> 699
<212> DNA
<213> Neisseria gonorrhoeae

<400> 845
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caaataatc cgccattta cctgtaaaaac cgccgcctga actttttat cgcggcagac 120
ggcggttgcg cgtctccgca aaaatgcagg gcgcgcgtt ttcagacggc atttgcgtt 180
caaggccgtg cgggtcttt accaaatgcc caaccattcg cccacggaaat ccatccaatc 240
cttattgcggcc cccgcgtcc tgcctgccc gcggtaacgcc cacggcgctt gcggattttt 300
agctttccac aatccttgc gttcccttc cgcctgaatt tgagcgtcgg catagtcgcc 360
aaaatccggcc ttatcctgct gttcttagc ataacttta taatgccacg ccgcggcgtc 420
ctgcacctgc atcaggttca aatcggtttt gcgcgcggat acctgcgcac cttcgcgtc 480
atagcggtcg gtttcaaaca cacgtacaat gagttcgtt ccctccgcgg ccgcgcgcag 540
gttgcgcgc gaaagtgtac cgtaaacgcgtt tttcatctcc ggtgcgtcga tataacgcac 600
ccgaattttt tggccgcgc cgtcgccgtc gatgacgttca agggtatcgc cgtcatagac 660
tttggacacc gtgcctgcgt agctgtggcc ggatttcgc 699

<210> 846
<211> 233
<212> PRT
<213> Neisseria gonorrhoeae

<400> 846
Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu
1 5 10 15

Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg
20 25 30

Leu Asn Phe Phe Ile Ala Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys
35 40 45

Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Gly Arg Ala
50 55 60

Val Ser Leu Pro Asn Ala Gln Pro Phe Ala His Gly Ile His Pro Ile
65 70 75 80

Leu Ile Ala Pro Ala Ala Pro Ala Cys Pro Ala Val Arg Pro Arg Arg
85 90 95

Leu Arg Ile Phe Ser Phe Pro Gln Ser Phe Ala Phe Pro Phe Arg Leu
100 105 110

Asn Leu Ser Val Gly Ile Val Gly Lys Ile Arg Leu Ile Leu Leu Phe
115 120 125

Phe Ser Ile Thr Phe Ile Met Pro Arg Arg Pro Val Leu His Leu His
130 135 140

Gln Val Gln Ile Gly Phe Ala Gly Gly Tyr Leu Arg His Phe Ala Leu
145 150 155 160

Ile Ala Val Gly Phe Lys His Thr Tyr Asn Glu Phe Arg Thr Leu Arg

165

170

175

Arg Arg Ala Gln Val Val Ala Arg Thr Cys Thr Val Ser Val Phe His
180 185 190

Leu Arg Cys Val Asp Ile Arg His Pro Asn Phe Met Phe Arg Ala Val
195 200 205

Ala Val Asp Asp Val Lys Gly Ile Ala Val Ile Asp Phe Gly His Arg
210 215 220

Ala Cys Val Ala Val Ala Gly Phe Arg
225 230

<210> 847

<211> 930

<212> DNA

<213> Neisseria meningitidis

<400> 847

atgtcaaaaac gaaaatccat aaaccgtccg tatcaaaaaac cggcgaaact gccgcgttg 60
caaaaataatc cgccattttt ccgtaaaaac cgccgcctga acttttttat cgcggcagac 120
ggcgggttgcg cgtctccgca aaaatgcagg gcgcgcgggtt ttcagacggc atttgcgtt 180
caaagccgtg cgggtgtttt accaaatgcc caaccatcg cccacggcat ccatccaatc 240
cttattgccc cgcgcgtcc tgcctgctcg gcggtaacgcc cacggcgctt gcggtttttt 300
agctttccac aatcctttgc gttcccttgc cgcctgaatt tgagcgtcgg cataatcgcc 360
aaaatccgcc ttatccgtt gttcttttagc ataactttta taatgccacg ccgcggccgtc 420
ctgcacctgc atcaggttca aatcggtttt gccgacagaa acctgcgcaca ctgcgcgtc 480
gtagcggcgtcg gtatcgaaca cgcgcacgtc gactttccgt cttccgcgg cgcgcgcac 540
gttgtcgcgc gaacgcgtgc cgtaagcctg tttcatctcc ggcgcgtcga tatacgccat 600
ccggattttg tgttcgcgc cgtcgcgcgc gataacgtga agggtgtcgc cgtcatagac 660
tttggacacc gtgcgtgtgt agcgggtggcc ggatttcgccc gatgcgtcggc ggcggcggg 720

cgcgtcgaa cccgcgtccc ctgcccgcgc gagtacgtcg agtacggcaa ccgcgtccg 780
caccgcctcg ctgccgtacc ccgtataacc caacgcaccc aaaagcgaca gggcgcacggg 840
aagccatttc atgattttttaatctgcat attttcaaa tgccgatgcc gtctgaacat 900
atcgaaatcg gatttcagac ggcataatcaa 930

<210> 848

<211> 309

<212> PRT

<213> Neisseria meningitidis

<400> 848

Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu
1 5 10 15

Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg
20 25 30

Leu Asn Phe Phe Ile Ala Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys
35 40 45

Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Ser Arg Ala

50	55	60
Val Ser Leu Pro Asn Ala Gln Pro Phe Ala His Gly Ile His His Pro Ile		
65	70	75
Leu Ile Ala Pro Ala Ala Pro Ala Cys Ser Ala Val Arg Pro Arg Arg		
85	90	95
Leu Arg Ile Phe Ser Phe Pro Gln Ser Phe Ala Phe Pro Phe Arg Leu		
100	105	110
Asn Leu Ser Val Gly Ile Ile Gly Lys Ile Arg Leu Ile Leu Leu Phe		
115	120	125
Phe Ser Ile Thr Phe Ile Met Pro Arg Arg Pro Val Leu His Leu His		
130	135	140
Gln Val Gln Ile Gly Phe Ala Asp Arg Asn Leu Arg His Phe Ala Leu		
145	150	155
160		
Val Ala Val Gly Ile Glu His Ala His Ala Asp Phe Pro Ala Phe Arg		
165	170	175
Arg Arg Ala Gln Val Val Ala Arg Thr Arg Ala Val Ser Leu Phe His		
180	185	190
Leu Arg Arg Val Asp Ile Arg His Pro Asp Phe Val Phe Arg Ala Val		
195	200	205
Ala Val Asp Asn Val Lys Gly Val Ala Val Ile Asp Phe Gly His Arg		
210	215	220
Ala Cys Val Ala Val Ala Gly Phe Arg Arg Cys Ser Ala Ala Gly Gly		
225	230	235
240		
Arg Val Gly Thr Arg Val Pro Cys Arg Ala Glu Tyr Val Glu Tyr Gly		
245	250	255
Asn Arg Arg Pro His Arg Leu Ala Ala Val Pro Arg Ile Thr Gln Arg		
260	265	270
Thr Gln Lys Arg Gln Gly Asp Gly Lys Pro Phe His Asp Phe Phe Asn		
275	280	285
Leu His Ile Phe Gln Met Pro Met Pro Ser Glu His Ile Gly Ile Gly		
290	295	300
Phe Gln Thr Ala Ser		
305		

<210> 849
 <211> 930
 <212> DNA
 <213> Neisseria meningitidis

<400> 849

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caaataatc cgccattta cctaaaaac cgccgcctga actttttat cgccgcagac 120
ggcggttgcg cgtctccgca aaaatgcagg gcgcgcgggtt ttcagacggc atttgcgtt 180
caaagccgtg cggtgtctt accaaatgcc caaccattcg cccacggcat ccaccaatc 240
cttattgccc cccgcgtcc tgcctgccc gcggtaacgc cacggcgctt gcggattttt 300
agctttcac aatccttgc gttcccttc cgcctgaatt tgagcgtcg cataatcgcc 360
aaaatccgcc ttatcctgct gttcttagc ataacttta taatgccacg ccccccgtc 420
ctgcacactgc atcaggttca aatcggtttt gccgacagaa acctgcgcaca ctgcgcgtg 480
gtagcggtcg gtgtcgaaca cgcggacgct gactttcctg cttccgcgg cgcgcgcag 540

gttgcgcgc gaacgcgtgc cgtaagcctg tttcatctcc gcgcgcgtcg tatagcgc 600
ccggattttt tgtttcgcgc cgtcgccgtc gataacgtga aggggtgcgc cgtcatagac 660
tttggacacc gtgcctgtgt agcggtggcc ggatttcgccc gatgctcgcc ggcggccggg 720
cgcgtcgaa cccgcgtccc ctgcccgcgc gagtacgtcg agtacggcaa ccgcgtccg 780
caccgcctcg ctgcccgtacc ccgtataacc caacgcaccc aaaagcgaca aggcgacggg 840
aagccatttc atgatttttt taatctgcat attttcaaa tgccgatgcc gtctgaacat 900
atcgaatcg gatttcagac ggcataatc 930

<210> 850

<211> 309

<212> PRT

<213> Neisseria meningitidis

<400> 850

Met Ser Lys Arg Lys Ser Ile Asn Arg Pro Tyr Gln Lys Pro Ala Glu
1 5 10 15

Leu Pro Pro Leu Gln Asn Asn Pro Pro Phe Tyr Arg Lys Asn Arg Arg
20 25 30

Leu Asn Phe Phe Ile Ala Ala Asp Gly Gly Cys Ala Ser Pro Gln Lys
35 40 45

Cys Arg Ala Arg Gly Phe Gln Thr Ala Phe Ala Val Gln Ser Arg Ala
50 55 60

Val Ser Leu Pro Asn Ala Gln Pro Phe Ala His Gly Ile His Pro Ile
65 70 75 80

Leu Ile Ala Pro Ala Ala Pro Ala Cys Pro Ala Val Arg Pro Arg Arg
85 90 95

Leu Arg Ile Phe Ser Phe Pro Gln Ser Phe Ala Phe Pro Phe Arg Leu
100 105 110

Asn Leu Ser Val Gly Ile Ile Gly Lys Ile Arg Leu Ile Leu Leu Phe
115 120 125

Phe Ser Ile Thr Phe Ile Met Pro Arg Arg Pro Val Leu His Leu His
130 135 140

Gln Val Gln Ile Gly Phe Ala Asp Arg Asn Leu Arg His Phe Ala Leu
145 150 155 160

Val Ala Val Gly Val Glu His Ala Asp Ala Asp Phe Pro Ala Phe Arg
165 170 175

Arg Arg Ala Gln Val Val Ala Arg Thr Arg Ala Val Ser Leu Phe His
180 185 190

Leu Arg Arg Val Asp Ile Arg His Pro Asp Phe Val Phe Arg Ala Val
195 200 205

Ala Val Asp Asn Val Lys Gly Val Ala Val Ile Asp Phe Gly His Arg
210 215 220

Ala Cys Val Ala Val Ala Gly Phe Arg Arg Cys Ser Ala Ala Gly Gly
225 230 235 240

Arg Val Gly Thr Arg Val Pro Cys Arg Ala Glu Tyr Val Glu Tyr Gly
245 250 255

Asn Arg Arg Pro His Arg Leu Ala Ala Val Pro Arg Ile Thr Gln Arg
260 265 270

Thr Gln Lys Arg Gln Gly Asp Gly Lys Pro Phe His Asp Phe Phe Asn
275 280 285

Leu His Ile Phe Gln Met Pro Met Pro Ser Glu His Ile Gly Ile Gly
290 295 300

Phe Gln Thr Ala Ser
305

<210> 851
<211> 873
<212> DNA
<213> Neisseria gonorrhoeae

<400> 851
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ttggaaacgg cgggttgcgg cgcgcgcct tatattgtcg ggataactggg tttgctggc 120
gccgtcggag gaacggccgg cagcctgttt atgcccgtcc tacccgc当地 ggctggcgat 180
acccaaatcg agtggaatat tgtccgtggt acaaataccc tgctgcgtga aacgggtcg 240
cacaatcccg ttttaccgc cattatcgcc atctcggtt ttgggttgg cggcgccgtt 300
tataccacgc aactgcccac cttaacccaa atccatttgg gccccaaacgta taatgttttt 360
aacctgatgc ttgctttgtt ttcacatcggtt attgcccggc gtccggtaact gtgtgccaag 420
ttcggcaggaa acggctgat gttggcttgg gtaacgggttgg gtgcgttggg ttcgacgggtt 480
tgcggcctgg ttttgggtgtt gctgacgcac ggacaccgtt ttgaagggtt gaaacggcatt 540
ttttgggtttt tatcgcaagg atgggcatac cccgtgatgg cggtgatgac gctgatcg 600
tttttgcggc gattttctc cgttccgc当地 tatacctggc tgccaaaccgc cagcagcgag 660
actttccgc当地 cccgc当地 cccgc当地 tgccgcaac aatatcgta acggcatctt tatgggttcc 720
gcccggcttt tgagcgcggatttgctgttt ttgtttgaca gcattttccct gctgtatctg 780
attgtcgct tggcaatat tccgttggcg gtattttga ttaagcgc当地 aaggcgggtt 840
ttaggcgc当地 cggcaatcag gaaaaaaacct tga 873

<210> 852
<211> 290
<212> PRT
<213> Neisseria gonorrhoeae

<400> 852
Met Met Gly Asn Ser Leu Ile Glu Ser Gly Thr Phe Val Ala Ile Leu
1 5 10 15
Phe Gly Gln Ile Leu Gly Thr Ala Val Ala Gly Ala Pro Pro Tyr Ile
20 25 30
Val Gly Ile Leu Val Leu Val Ala Val Gly Gly Thr Ala Gly Ser
35 40 45
Leu Phe Met Pro Ser Val Pro Ala Lys Ala Ala Asp Thr Gln Ile Glu
50 55 60
Trp Asn Ile Val Arg Gly Thr Lys Ser Leu Leu Arg Glu Thr Val Arg
65 70 75 80
His Asn Pro Val Phe Thr Ala Ile Ile Gly Ile Ser Trp Phe Trp Phe
85 90 95
Val Gly Ala Val Tyr Thr Thr Gln Leu Pro Thr Phe Thr Gln Ile His
100 105 110
Leu Gly Gly Asn Asp Asn Val Phe Asn Leu Met Leu Ala Leu Phe Ser
115 120 125
Ile Gly Ile Ala Ala Gly Ser Val Leu Cys Ala Lys Phe Gly Arg Glu
130 135 140
Arg Leu Met Leu Ala Trp Val Thr Val Gly Ala Leu Gly Ser Thr Val
145 150 155 160
Cys Gly Leu Val Leu Val Trp Leu Thr His Gly His Arg Phe Glu Gly
165 170 175
Leu Asn Gly Ile Phe Trp Phe Leu Ser Gln Gly Trp Ala Tyr Pro Val
180 185 190
Met Ala Val Met Thr Leu Ile Gly Phe Phe Gly Gly Phe Phe Ser Val
195 200 205
Pro Leu Tyr Thr Trp Leu Gln Thr Ala Ser Ser Glu Thr Phe Arg Ala
210 215 220
Arg Ala Val Ala Ala Asn Asn Ile Val Asn Gly Ile Phe Met Val Ser
225 230 235 240
Ala Ala Val Leu Ser Ala Val Leu Leu Phe Leu Phe Asp Ser Ile Ser
245 250 255
Leu Leu Tyr Leu Ile Val Ala Leu Gly Asn Ile Pro Leu Ala Val Phe
260 265 270
Leu Ile Lys Arg Glu Arg Arg Phe Leu Gly Ala Ala Ala Ile Arg Lys
275 280 285
Lys Pro
290

<210> 853
<211> 868
<212> DNA
<213> Neisseria meningitidis

<400> 853
atgatggca acagcctgat tgaatcggt acgttgtcg ccattctgtt cggtcagatt 60
ttgggaacgg cggtggcagg tgtaccgcct tatattgtcg ggataactggg tttgctggc 120
gccgtcgag gcacggtcgg cagcctgtt atgcccgtccg taccggccaa ggctgcccgt 180
acacaatgg agtggaatat tgtccgtgg acaaaatccc tgctgcgtga aacgtgcgg 240
cacaagcccg ttttaccgc cattatcggt atttcgtggg tttgggtttgt cggcgcgg 300
tataccacgc aactgcccac ctttacccaa atccatctgg gcccgaacga caatgtttc 360
aacctgatgc ttgctctgtt ttccatcggt attgcccgg gttcggtact gtgtgccaag 420
ttcagcakgg aacgcctgat gttggcttg gtaacgggg gtgcgttggg tttgacgg 480
tgcggcttgg tttgggtgt gctgacgcac ggacaccgtt ttgaagggtt gaacggcatt 540
ttttrgtttt tatcgcaagg atgggcataat cccgtatgg cgggtatgac gctgatcggc 600
tttttcggcg gattttctc cgttccgctc tataacctgtg caaaccggcca tagcgagatt 660
tccgcgcccc gccgttgcgg ccaacaatat cgtaacggg atttttatgg tttccgctgc 720
cgaaaaatggc gcggtgttgc tgttttgtt tgacacgatt tccttgggtt atctgattgt 780
cgcttgggc aatattccgt tgtcggattt ttgattaag cgccaaaggc ggtttttagg 840
cgccggcggca atcaggaaaa aaccttga 868

<210> 854
<211> 288
<212> PRT
<213> Neisseria meningitidis

<400> 854
Met Met Gly Asn Ser Leu Ile Glu Ser Gly Thr Phe Val Ala Ile Leu
1 5 10 15

Phe Gly Gln Ile Leu Gly Thr Ala Val Ala Gly Val Pro Pro Tyr Ile
20 25 30

Val Gly Ile Leu Val Leu Val Ala Val Gly Gly Thr Val Gly Ser
35 40 45

Leu Phe Met Pro Ser Val Pro Ala Lys Ala Ala Asp Thr Gln Ile Glu
50 55 60

Trp Asn Ile Val Arg Gly Thr Lys Ser Leu Leu Arg Glu Thr Val Arg
65 70 75 80

His Lys Pro Val Phe Thr Ala Ile Ile Gly Ile Ser Trp Phe Trp Phe
85 90 95

Val Gly Ala Val Tyr Thr Thr Gln Leu Pro Thr Phe Thr Gln Ile His
100 105 110

Leu Gly Gly Asn Asp Asn Val Phe Asn Leu Met Leu Ala Leu Phe Ser
115 120 125

Ile Gly Ile Ala Ala Gly Ser Val Leu Cys Ala Lys Phe Ser Xaa Glu

130	135	140
Arg Leu Met Leu Ala Trp Val Thr Val Gly Ala Leu Gly Leu Thr Val		
145	150	155
Cys Gly Leu Val Leu Val Trp Leu Thr His Gly His Arg Phe Glu Gly		
165	170	175
Leu Asn Gly Ile Phe Xaa Phe Leu Ser Gln Gly Trp Ala Tyr Pro Val		
180	185	190
Met Ala Val Met Thr Leu Ile Gly Phe Phe Gly Gly Phe Phe Ser Val		
195	200	205
Pro Leu Tyr Thr Val Gln Thr Ala Ile Ala Arg Phe Pro Arg Pro Ala		
210	215	220
Val Ala Ala Asn Asn Ile Val Asn Gly Ile Phe Met Val Ser Ala Ala		
225	230	235
Val Leu Ser Ala Val Leu Leu Phe Leu Phe Asp Ser Ile Ser Leu Leu		
245	250	255
Tyr Leu Ile Val Ala Leu Gly Asn Ile Pro Leu Ser Val Phe Leu Ile		
260	265	270
Lys Arg Glu Arg Arg Phe Leu Gly Ala Ala Ala Ile Arg Lys Lys Pro		
275	280	285

<210> 855
 <211> 1311
 <212> DNA
 <213> Neisseria meningitidis

<400> 855
 atgtacgcta aaaaaggccgg ttggggactg gttaaaagcc gccgtttcgc acctcttttc 60
 gctacgcagt ttctcggcgc gttcaacgac aatgtgttca aaaccgcgt gtttgtatg 120
 attgggtttt acgggttggg gcaaaaacggc ttccctgcctg ccggacagat gttgaacttg 180
 ggcgcgttgc tggttatattt gccgtatttc ctgtttcct cgctgtcggg gcagttgggt 240
 aacaaattcg acaaggccgt tttggcgcgt tgggccaagg tgctggaaat gatcattatg 300
 gcgggtggcgg catacggggtt ttatatccgg tctgcggccgc tgcttttggc gtgtctgttt 360
 tgcataggcgc cgcaatcgac gctgttccgg cccgctgaaat acgccatcct gcccattat 420
 ctcgacgaca aagagtttatg gatgggcacac agcctgattt aatcgggtac gtttgcggcc 480
 atcctgttcg gtcagatact ggggactgcg gtggcagggtg taccgcctta tattgtcggg 540
 atactggttt tgctggcgc ctagggaggg acggcggca gcctgtttat gccgtccgt 600
 cccgccaagg ctggcgatac acaaatttgg tggaaatattt tccggggatc aaaatccctg 660
 ctgcgtgaaa cgggtggcga caagcccggtt tttaccgcca ttatcggtat ttcgtgggtt 720
 tggtttgcg ggcgcgttta taccacgcaa ctggccgacctt ttacccaaat ccatcttaggc 780
 ggcaacgaca atgtttcaaa cctgatgctt gcccgtttt ccatcggtat tgccggccgt 840
 tcggtaactgt gtgccaagtt cagcaggaa cggctgaggt tggctgggt aacggttgg 900
 gcgttgggtt tgacgggttg cggcttgggt ttgggtgtggc tgacgcacgg acaccgtttt 960
 gaagggctga acggcattttt ttgggtttta tcgcaaggat gggcatatcc cgtgatggcg 1020
 gtgatgacgc tgatcggtt tttcggccga tttttctccg ttccgctcta tacctggctg 1080

caaaccgcca gtagcgagac tttccgcgcc cgccgcgttg ccgccaacaa tatcgtaac 1140
ggtatttta tggttccgc tgccgtttt agcgccgtgt tgctgtttt gtttacagc 1200
atttccttgt tgtatctgat tgtcgctttt ggcaatattc cgttgtcggt attttgatt 1260
aagcgcgaaa ggcggtttt aggcgcggcg gcaatcagga aaaaaccttg a 1311

<210> 856

<211> 436

<212> PRT

<213> Neisseria meningitidis

<400> 856

Met Tyr Ala Lys Lys Gly Gly Leu Gly Leu Val Lys Ser Arg Arg Phe
1 5 10 15

Ala Pro Leu Phe Ala Thr Gln Phe Leu Gly Ala Phe Asn Asp Asn Val
20 25 30

Phe Lys Thr Ala Leu Phe Val Met Ile Gly Phe Tyr Gly Leu Gly Gln
35 40 45

Asn Gly Phe Leu Pro Ala Gly Gln Met Leu Asn Leu Gly Ala Leu Leu
50 55 60

Phe Ile Leu Pro Tyr Phe Leu Phe Ser Ser Leu Ser Gly Gln Leu Gly
65 70 75 80

Asn Lys Phe Asp Lys Ala Val Leu Ala Arg Trp Ala Lys Val Leu Glu
85 90 95

Met Ile Ile Met Ala Val Ala Ala Tyr Gly Phe Tyr Ile Arg Ser Ala
100 105 110

Pro Leu Leu Leu Ala Cys Leu Phe Cys Met Gly Ala Gln Ser Thr Leu
115 120 125

Phe Gly Pro Leu Lys Tyr Ala Ile Leu Pro Asp Tyr Leu Asp Asp Lys
130 135 140

Glu Leu Met Met Gly Asn Ser Leu Ile Glu Ser Gly Thr Phe Val Ala
145 150 155 160

Ile Leu Phe Gly Gln Ile Leu Gly Thr Ala Val Ala Gly Val Pro Pro
165 170 175

Tyr Ile Val Gly Ile Leu Val Leu Leu Val Ala Val Gly Gly Thr Val
180 185 190

Gly Ser Leu Phe Met Pro Ser Val Pro Ala Lys Ala Ala Asp Thr Gln
195 200 205

Ile Glu Trp Asn Ile Val Arg Gly Thr Lys Ser Leu Leu Arg Glu Thr
210 215 220

Val Arg His Lys Pro Val Phe Thr Ala Ile Ile Gly Ile Ser Trp Phe
225 230 235 240

Trp Phe Val Gly Ala Val Tyr Thr Thr Gln Leu Pro Thr Phe Thr Gln
 245 250 255
 Ile His Leu Gly Gly Asn Asp Asn Val Phe Asn Leu Met Leu Ala Leu
 260 265 270
 Phe Ser Ile Gly Ile Ala Ala Gly Ser Val Leu Cys Ala Lys Phe Ser
 275 280 285
 Arg Glu Arg Leu Arg Leu Ala Trp Val Thr Val Gly Ala Leu Gly Leu
 290 295 300
 Thr Val Cys Gly Leu Val Leu Val Trp Leu Thr His Gly His Arg Phe
 305 310 315 320
 Glu Gly Leu Asn Gly Ile Phe Trp Phe Leu Ser Gln Gly Trp Ala Tyr
 325 330 335
 Pro Val Met Ala Val Met Thr Leu Ile Gly Phe Phe Gly Gly Phe Phe
 340 345 350
 Ser Val Pro Leu Tyr Thr Trp Leu Gln Thr Ala Ser Ser Glu Thr Phe
 355 360 365
 Arg Ala Arg Ala Val Ala Ala Asn Asn Ile Val Asn Gly Ile Phe Met
 370 375 380
 Val Ser Ala Ala Val Leu Ser Ala Val Leu Leu Phe Leu Phe Asp Ser
 385 390 395 400
 Ile Ser Leu Leu Tyr Leu Ile Val Ala Leu Gly Asn Ile Pro Leu Ser
 405 410 415
 Val Phe Leu Ile Lys Arg Glu Arg Arg Phe Leu Gly Ala Ala Ala Ile
 420 425 430
 Arg Lys Lys Pro
 435

<210> 857
 <211> 690
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 857
 atgaaacgc aaaaatatcgc gctgattccc gccggccggca tcggggtgcg tttcggtgcg 60
 gacaaaccca agcaatatacgta cgaaatcgga agcaaaaaccg ttttagaaca tgtacttggg 120
 attttgaac ggcattggc cgtcgatttg accgtcggtt tcgtctcgcc cgaagacacg 180
 ttggccata aggttcagac ggcatattcca caggttcggg tggaaaaaaa cggttggacag 240
 acccgcccg aaactgtccg caacgggtgt gcaaaaactgt tggaaaccgg tttggccggcg 300
 gaaaccgaca atattcttgtt acacgatgcc gccccgtgt gcctgcgc tgaagctctg 360
 ggcgggttga tagaacaggc gggcaacgccc gccaaggcg ggattttggc agttcccggt 420
 gccgatacgc tcaagcgcgc agaaagcgga caaatcagtg caactgtcga ccgttcgggg 480
 ctggccagg cgcaaaacgc gcaagctttt caagcgggtt tgctgcaccc cgcatggct 540
 gccggaaaact tggggccgcat taccgatgaa gctgtccggc tggaaaaact gggtgtgcgt 600
 ccgctactga tacagggcga cgcgccaat ttgaaactga cgccagccca ggacgcatac 660

atcgtcaggc tgctgctcaa tgccgtctga 690

<210> 858
<211> 229
<212> PRT
<213> Neisseria gonorrhoeae

<400> 858
Met Lys Arg Lys Asn Ile Ala Leu Ile Pro Ala Ala Gly Ile Gly Val
1 5 10 15
Arg Phe Gly Ala Asp Lys Pro Lys Gln Tyr Val Glu Ile Gly Ser Lys
20 25 30
Thr Val Leu Glu His Val Leu Gly Ile Phe Glu Arg His Glu Ala Val
35 40 45
Asp Leu Thr Val Val Val Ser Pro Glu Asp Thr Phe Ala Asp Lys
50 55 60
Val Gln Thr Ala Phe Pro Gln Val Arg Val Trp Lys Asn Gly Gly Gln
65 70 75 80
Thr Arg Ala Glu Thr Val Arg Asn Gly Val Ala Lys Leu Leu Glu Thr
85 90 95
Gly Leu Ala Ala Glu Thr Asp Asn Ile Leu Val His Asp Ala Ala Arg
100 105 110
Cys Cys Leu Pro Ser Glu Ala Leu Ala Arg Leu Ile Glu Gln Ala Gly
115 120 125
Asn Ala Ala Glu Gly Gly Ile Leu Ala Val Pro Val Ala Asp Thr Leu
130 135 140
Lys Arg Ala Glu Ser Gly Gln Ile Ser Ala Thr Val Asp Arg Ser Gly
145 150 155 160
Leu Trp Gln Ala Gln Thr Pro Gln Leu Phe Gln Ala Gly Leu Leu His
165 170 175
Arg Ala Leu Ala Ala Glu Asn Leu Gly Gly Ile Thr Asp Glu Ala Ser
180 185 190
Ala Val Glu Lys Leu Gly Val Arg Pro Leu Leu Ile Gln Gly Asp Ala
195 200 205
Arg Asn Leu Lys Leu Thr Gln Pro Gln Asp Ala Tyr Ile Val Arg Leu
210 215 220
Leu Leu Asn Ala Val
225

<210> 859

<211> 456
<212> DNA
<213> Neisseria meningitidis

<400> 859
atgaagcgca aaaatatcgc gctgattccc gccgcggca tcggggcgcg tttcggtgcg 60
gacaaaccca agcaatatgt cgaaatcgga agcaaaaccg ttttagaaca tacgattggg 120
attttgaac ggcatgaggc cgtcgatttg accgtcggttgcgtctcgcc cgaagacacg 180
tttgcgata aggttcagac ggcatttcca caggttcggg tggaaacccgg 240
acccgcgccc aaaccgtccg caacgggtgtg gcaaaaactgt tggaaacccgg 300
gaaaccgaca atattcttgtt acacgatgcc gcgcgttgcgtc tgaaagctttg 360
acgcgggtga tagaacaggc gggcaacgc ggcgaaggcg ggattttggc aattccatt 420
gccgatacgc tcaagtgcgc ggacgggtggg aacatt 456

<210> 860
<211> 152
<212> PRT
<213> Neisseria meningitidis

<400> 860
Met Lys Arg Lys Asn Ile Ala Leu Ile Pro Ala Ala Gly Ile Gly Ala
1 5 10 15
Arg Phe Gly Ala Asp Lys Pro Lys Gln Tyr Val Glu Ile Gly Ser Lys
20 25 30
Thr Val Leu Glu His Thr Ile Gly Ile Phe Glu Arg His Glu Ala Val
35 40 45
Asp Leu Thr Val Val Val Ser Pro Glu Asp Thr Phe Ala Asp Lys
50 55 60
Val Gln Thr Ala Phe Pro Gln Val Arg Val Trp Lys Asn Gly Gly Gln
65 70 75 80
Thr Arg Ala Glu Thr Val Arg Asn Gly Val Ala Lys Leu Leu Glu Thr
85 90 95
Gly Leu Ala Ala Glu Thr Asp Asn Ile Leu Val His Asp Ala Ala Arg
100 105 110
Cys Cys Leu Pro Ser Glu Ala Leu Thr Arg Leu Ile Glu Gln Ala Gly
115 120 125
Asn Ala Ala Glu Gly Gly Ile Leu Ala Ile Pro Ile Ala Asp Thr Leu
130 135 140
Lys Cys Ala Asp Gly Gly Asn Ile
145 150

<210> 861
<211> 690
<212> DNA
<213> Neisseria meningitidis

<400> 861

atgaagcgca aaaatatcgc gctgattccc gccgcggca tcggggcgcg tttcggtgcg 60
gacaaaccca agcaatatgt cgaaaatcgga agcaaaaaccg ttttagaaca tacgattggg 120
attttgaac ggcatgaggc cgtcgattt accgtcggt tcgtctcgcc cgaagacacg 180
tttgcgata aggttcagac gcatttcca caggttcggg tgtggaaaaa cggcggacag 240
acccgcgccc aaactgtccg caaccggtgt gcaaaaattgt tgaaacccgg tttggcggcg 300
gaaaccgaca atattcttgt acacgatgcc gcgcgttgct gcctgcccgtc tgaagcttg 360
acgcggtgta tagaacaggc gggcaacgct gccgaagggtg gtatggc aattcccgaa 420
gccgatacgc tcaagtgcgc gcacggtggg aacattagtg caaccgtcga gcggacgagc 480
cttggcagg cgcaaacgccc gcagctttc cgccggggc tgctgcaccg cgcattggct 540
gcggaaaact tggacggcat taccgtatgaa gcgtccggcg tgaaaaatt gggcatccgc 600
ccttgctgg tgcaaggcga cgccgcataat ttgaaactga cgcagccgca ggacgcatac 660
atcgctcaggc tgctgctcga tgccgtctga 690

<210> 862

<211> 229

<212> PRT

<213> Neisseria meningitidis

<400> 862

Met Lys Arg Lys Asn Ile Ala Leu Ile Pro Ala Ala Gly Ile Gly Ala
1 5 10 15

Arg Phe Gly Ala Asp Lys Pro Lys Gln Tyr Val Glu Ile Gly Ser Lys
20 25 30

Thr Val Leu Glu His Thr Ile Gly Ile Phe Glu Arg His Glu Ala Val
35 40 45

Asp Leu Thr Val Val Val Ser Pro Glu Asp Thr Phe Ala Asp Lys
50 55 60

Val Gln Thr Ala Phe Pro Gln Val Arg Val Trp Lys Asn Gly Gly Gln
65 70 75 80

Thr Arg Ala Glu Thr Val Arg Asn Gly Val Ala Lys Leu Leu Glu Thr
85 90 95

Gly Leu Ala Ala Glu Thr Asp Asn Ile Leu Val His Asp Ala Ala Arg
100 105 110

Cys Cys Leu Pro Ser Glu Ala Leu Thr Arg Leu Ile Glu Gln Ala Gly
115 120 125

Asn Ala Ala Glu Gly Gly Ile Leu Ala Ile Pro Val Ala Asp Thr Leu
130 135 140

Lys Cys Ala Asp Gly Gly Asn Ile Ser Ala Thr Val Glu Arg Thr Ser
145 150 155 160

Leu Trp Gln Ala Gln Thr Pro Gln Leu Phe Arg Ala Gly Leu Leu His
165 170 175

Arg Ala Leu Ala Ala Glu Asn Leu Asp Gly Ile Thr Asp Glu Ala Ser
180 185 190

Ala Val Glu Lys Leu Gly Ile Arg Pro Leu Leu Val Gln Gly Asp Ala
195 200 205

Arg Asn Leu Lys Leu Thr Gln Pro Gln Asp Ala Tyr Ile Val Arg Leu
210 215 220

Leu Leu Asp Ala Val
225

<210> 863

<211> 672

<212> DNA

<213> Neisseria gonorrhoeae

<400> 863

atgaaaaccg tttccgcgc catcgcttt gccggcgtg ccgttcaact gaccggctgt 60
gcgaccgagt cctcacgcag cctcgagggtt gcaaaagtgc ctcctgc当地 tacgcaatat 120
cacgggtttc gcaccccgat ttccgtcggg acattcgaca accgctccag cttccaaaaaa 180
ggcattttctt ccgacagtga agaccgtctg ggcagccagg caaaaaccat cctggtaaca 240
cacctgcaac aaaccaaccg cttcaacgta ctgaaccgca ccaaccttag cgcatggaaa 300
caggaatccg gcattccgg caaagcgcag aacctgaaaag ggcagcatta tgtcgttacc 360
ggcgatgtaa ccgaattccgg acgcagagat gtcggcgatc atcagctttt cggcattttt 420
ggtcgcggca aatcgaaat cgcctatgca aaagtggctc tgaatatcgt caacgtcaat 480
acttccgaaa tcgtctattc cacacaggcc gcggggcaat acgcactttc caaccgcgaa 540
atcatcggtt tcggccgcac ttccggctac gatgcgactt tgaacggcaa agtttagac 600
ttggcaatcc gcgaagccgt cgacaacttg gttcaggctg tcgacaacgg cgcatggcaa 660
tccaaccgtt aa 672

<210> 864

<211> 223

<212> PRT

<213> Neisseria gonorrhoeae

<400> 864

Met Lys Thr Val Ser Ala Ala Ile Ala Phe Ala Ala Ala Val Ser
1 5 10 15

Leu Thr Gly Cys Ala Thr Glu Ser Ser Arg Ser Leu Glu Val Ala Lys
20 25 30

Val Ala Ser Cys Asn Thr Gln Tyr His Gly Val Arg Thr Pro Ile Ser
35 40 45

Val Gly Thr Phe Asp Asn Arg Ser Ser Phe Gln Lys Gly Ile Phe Ser
50 55 60

Asp Ser Glu Asp Arg Leu Gly Ser Gln Ala Lys Thr Ile Leu Val Thr
65 70 75 80

His Leu Gln Gln Thr Asn Arg Phe Asn Val Leu Asn Arg Thr Asn Leu
85 90 95

Ser Ala Leu Lys Gln Glu Ser Gly Ile Ser Gly Lys Ala Gln Asn Leu
100 105 110

Lys Gly Ala Asp Tyr Val Val Thr Gly Asp Val Thr Glu Phe Gly Arg
115 120 125

Arg Asp Val Gly Asp His Gln Leu Phe Gly Ile Leu Gly Arg Gly Lys
130 135 140

Ser Gln Ile Ala Tyr Ala Lys Val Ala Leu Asn Ile Val Asn Val Asn
145 150 155 160

Thr Ser Glu Ile Val Tyr Ser Thr Gln Gly Ala Gly Glu Tyr Ala Leu
165 170 175

Ser Asn Arg Glu Ile Ile Gly Phe Gly Gly Thr Ser Gly Tyr Asp Ala
180 185 190

Thr Leu Asn Gly Lys Val Leu Asp Leu Ala Ile Arg Glu Ala Val Asp
195 200 205

Asn Leu Val Gln Ala Val Asp Asn Gly Ala Trp Gln Ser Asn Arg
210 215 220

<210> 865

<211> 164

<212> DNA

<213> Neisseria meningitidis

<400> 865

ggcgccggcg aatacgcact ttccaaccgt gaaatcatcg gtttcggcgg cacttccggc 60
tacgatgcga cttaaacgg caaaagttta gacttggcaa tccgcgaagc gtcaacagcc 120
tgttcaggc tgttgacaac ggccatggc aacccaaaccg ttaa 164

<210> 866

<211> 54

<212> PRT

<213> Neisseria meningitidis

<400> 866

Gly Ala Gly Glu Tyr Ala Leu Ser Asn Arg Glu Ile Ile Gly Phe Gly
1 5 10 15

Gly Thr Ser Gly Tyr Asp Ala Thr Leu Asn Gly Lys Val Leu Asp Leu
20 25 30

Ala Ile Arg Glu Ala Val Asn Ser Leu Val Gln Ala Val Asp Asn Gly
35 40 45

Ala Trp Gln Pro Asn Arg
50

<210> 867

<211> 399

<212> DNA

<213> Neisseria meningitidis

<400> 867
aacccgcacct atttgaacgc attaaaacag gaatccggca tttccggcaa agcgataac 60
ctgaaaggcg caaattatgt cgnnaccggc gatgttaaccg aattccggacg canagatgtc 120
ggcgtatcatc agctcttcgg cattttgggt cgccggaaat cgcaaatcgc ctatgcaaaa 180
gtggctctga atatcgtaa cgtcaatact tccgaaatcg tctattccgc acagggcg 240
ggcgaatacg cactttccaa ccgtgaaatc atcgggttcg gcggcacttc cggctacgat 300
gcgactttga acggcaaagt tttagacttg gcaatccgca aagccgtcaa cagcctggtt 360
caggctgttg acaacggcgc atggcaaccc aaccgttaa 399

<210> 868
<211> 132
<212> PRT
<213> Neisseria meningitidis

<400> 868
Asn Arg Thr Tyr Leu Asn Ala Leu Lys Gln Glu Ser Gly Ile Ser Gly
1 5 10 15
Lys Ala His Asn Leu Lys Gly Ala Asn Tyr Val Xaa Thr Gly Asp Val
20 25 30
Thr Glu Phe Gly Arg Xaa Asp Val Gly Asp His Gln Leu Phe Gly Ile
35 40 45
Leu Gly Arg Gly Lys Ser Gln Ile Ala Tyr Ala Lys Val Ala Leu Asn
50 55 60
Ile Val Asn Val Asn Thr Ser Glu Ile Val Tyr Ser Ala Gln Gly Ala
65 70 75 80
Gly Glu Tyr Ala Leu Ser Asn Arg Glu Ile Ile Gly Phe Gly Thr
85 90 95
Ser Gly Tyr Asp Ala Thr Leu Asn Gly Lys Val Leu Asp Leu Ala Ile
100 105 110
Arg Glu Ala Val Asn Ser Leu Val Gln Ala Val Asp Asn Gly Ala Trp
115 120 125
Gln Pro Asn Arg
130

<210> 869
<211> 648
<212> DNA
<213> Neisseria gonorrhoeae

<400> 869
atgaaacctt tgattttagg gcttgcgcgt gtgtggctc tgtctgcctg ccaagttcga 60
aaagctcccg acctcgacta cacgtcattc aaagaaagca aaccggctc aattttggtg 120
gttccgcgcgt tgaacgagtc gctgtatgtc aacggcactt gggggatgtc ggcttcgacc 180
gccgcgcccgt tttccgaaaggc cggttattac gtcttccccg ccgcgtcggtt ggagggaaacc 240
ttcaaaagaaa acggcttgac caatgccgcgatattcactt ccgtccggcc ggaaaaactg 300
catcaaattt tcggcaatgt tgccgttttg tacattacgg ttaccgaata cggcacttca 360
tatcaaattt tagacagcgt gacgaccgtt tccgoccaag cacggcttgtt cgattccgc 420

aacgggaaag agttgtggtc gggttcggcc agcatccgctg aaggcagcaa caacagcaac 480
agcggcctgt tggggcttt gtgcggcgca gtggtaatc agattgcca cagcctgacc 540
gaccgcggtt atcaggttcc caaaaaccgccc gcataacaacc tactgtcgcc ctattccgc 600
aacggtatct tgaaaggtcc gagattcgtc gaagagcagc ccaaataa 648

<210> 870

<211> 215

<212> PRT

<213> Neisseria gonorrhoeae

<400> 870

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Arg Lys Ala Pro Asp Leu Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Met Leu Ala Ser Thr Ala Ala Pro Ile
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Glu Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Gly Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser Arg Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 871

<211> 648

<212> DNA

<213> Neisseria meningitidis

<400> 871

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gttccgcgcgc tgaacgaatc gcccgcgtc aacggaaacat ggggtgtact ggcttcgacc 180
gccgcgcgcgc ttccccaagc cggctattac gtcttccccg ccgcagtcgt ggagggaaacc 240
ttcaaaacaaa acggcttgac caatgccgcc gatattcacg ccgtccggcc ggaaaaactg 300
catcagattt tcggcaatga tgcgggtttt tacattacgg ttaccgaata cggcacttca 360
tatcaaattt tagacagcgt gacgaccgta tccgccaag cacggctggc cgattccgc 420
aacggaaaag agttgtggc gggtcggcc agcatccgcg aaggcagcaa caacagcaac 480
agcggccctgt tgggggctt gtcagcgcgta gtggtaatc agattgcca cagcctgacc 540
gaccgcggtt atcaggtttc caaaaccgcc gcataacaacc tgctgtcgcc ctattctcac 600
aacggcatct tgaaagggtcc gagattcgtt gaagagcagc ccaaataaa 648

<210> 872

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 872

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 873

<211> 648

<212> DNA

<213> Neisseria meningitidis

<400> 873

atgaaacctt tgattttagg gcttgcgcgt gtgtggcg tgcgtgcctg ccaagttcaa 60
aaagcgcccg atttcgacta cacgtcattc aaggaaagca aaccggcttc aattttggtg 120
gttccgcgcgt tgaacgaatc gcccgtatgtc aacggAACat ggggtgtact ggcttcgacc 180
gccgcgcgcgt ttccgaagc cggttattac gtctcccccg ccgcgtcgt ggaggaaacc 240
ttcaaacaaa acggcttgac caatgccgoc gatattcacg ccgtccggcc ggaaaaactg 300

catcagattt tcggcaatga tgcgggtttt tacattacgg ttaccgaata cggcacttca 360
tatcaaattt tagacacggt gacgaccgt tccgcacaag cacggctgtt cgattccgc 420
aacggAAAAG agttgtggtc ggggttcggcc agcatccgcg aaggcagcaa caacagcaac 480
agcggcctgt tgggggctt ggtcagcgtca gtggtcaatc agattgcca cagcctgacc 540
gaccgcgggtt atcaggtttca taaaaccgcgc gcataacaacc tgctgtcgcc ctattctcac 600
aacggcatct tgaaaggtcc gagattcgtc gaagagcagc ccaaataa 648

<210> 874

<211> 215

<212> PRT

<213> Neisseria meningitidis

<400> 874

Met Lys Pro Leu Ile Leu Gly Leu Ala Ala Val Leu Ala Leu Ser Ala
1 5 10 15

Cys Gln Val Gln Lys Ala Pro Asp Phe Asp Tyr Thr Ser Phe Lys Glu
20 25 30

Ser Lys Pro Ala Ser Ile Leu Val Val Pro Pro Leu Asn Glu Ser Pro
35 40 45

Asp Val Asn Gly Thr Trp Gly Val Leu Ala Ser Thr Ala Ala Pro Leu
50 55 60

Ser Glu Ala Gly Tyr Tyr Val Phe Pro Ala Ala Val Val Glu Glu Thr
65 70 75 80

Phe Lys Gln Asn Gly Leu Thr Asn Ala Ala Asp Ile His Ala Val Arg
85 90 95

Pro Glu Lys Leu His Gln Ile Phe Gly Asn Asp Ala Val Leu Tyr Ile
100 105 110

Thr Val Thr Glu Tyr Gly Thr Ser Tyr Gln Ile Leu Asp Ser Val Thr
115 120 125

Thr Val Ser Ala Lys Ala Arg Leu Val Asp Ser Arg Asn Gly Lys Glu
130 135 140

Leu Trp Ser Gly Ser Ala Ser Ile Arg Glu Gly Ser Asn Asn Ser Asn
145 150 155 160

Ser Gly Leu Leu Gly Ala Leu Val Ser Ala Val Val Asn Gln Ile Ala
165 170 175

Asn Ser Leu Thr Asp Arg Gly Tyr Gln Val Ser Lys Thr Ala Ala Tyr
180 185 190

Asn Leu Leu Ser Pro Tyr Ser His Asn Gly Ile Leu Lys Gly Pro Arg
195 200 205

Phe Val Glu Glu Gln Pro Lys
210 215

<210> 875

<211> 1038

<212> DNA

<213> Neisseria gonorrhoeae

<400> 875

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gctggctttg gcccgaacgg caagttcatc accgactttc acttctgctt tagacaccag 180
cagggcaaaag cgcaatttctt cgcccaaagc attcagatag ccggccattt cttccggcgc 240
ggtaatttcg gcttccgcct gcaaggacga accgacagtt ttgtcggcgc gcaaaggctc 300
gatacgccgc gttactgctt cgcgcgcctt gcggattgcc gtccatttt tcaccagtcc 360
ggcttcggct ttttcgttga tggccggaa ctcgtgc当地 gtatgaaaga ggacgctgtc 420
ttcttcgccc cggccgatga tgcgtgc当地 ttcttcgccc gtgaaggcaca aaatcggtgc 480
aatcaagaga accaggctgc gcgtgatgtg gtacaggcgc gtttgcgc当地 tgcggcggc 540
gccccctgtcg gctttgggtgg ttagaggcgc gtctttcagg atgtcgaggt agaacgcgc当地 600
caagtcttcc gagcagaaaag aaacaatgtc tttcacggcg aagtggaaagg catacgccgg 660
atagtaaccg cctgccaac gctcttgc当地 ccgcgc当地 aataccaagg cgtacgc当地 720
gatttccacc atatccgcct gttgcacggc atcttcaatc ggattaaagt cgctcaaatt 780
ggcaaacagg aagctcaagg tattgcggat gcccggtag ctttcggtaa cgcgtttgag 840
gatttctttg gaaatcgcca attcgccgct gtaatcggtg gatgccccc acaggcgc当地 900
gatgtccgc当地 ccgaattcgt tatagacttc ctgcggcgc当地 acgacgttgc cgtatggattt 960
cgacattttt cggccgtttt ggtcaaccac gaaaccgtgg gtcagcagct gtttatacgg 1020
tgcgc当地 atggatga 1038

<210> 876

<211> 345

<212> PRT

<213> Neisseria gonorrhoeae

<400> 876

Met Ala Arg Phe Ala Phe Ser Ala Asp Ile Leu Arg Thr Ala Phe Ala
1 5 10 15

Asp Gly Phe Ile Thr Cys Asn Arg Ala His Ile Ala Gly Val Met Pro
20 25 30

Ala Ala Phe Ala Phe Phe Ala Val Ala Gly Phe Gly Gly Asn Gly Lys
35 40 45

Phe Ile Thr Asp Phe His Phe Cys Phe Arg His Gln Gln Gly Lys Ala
50 55 60

Gln Phe Phe Ala Gln Ser Ile Gln Ile Ala Gly His Phe Phe Arg Arg
65 70 75 80

Gly Asn Phe Gly Phe Arg Leu Gln Gly Arg Thr Asp Ser Phe Val Gly
85 90 95

Ala Gln Arg Leu Asp Ser Gly Gly Tyr Cys Phe Ala Arg Phe Ala Asp
100 105 110

Cys Arg Pro Phe Phe His Gln Phe Gly Phe Gly Phe Val Asp Gly
115 120 125

Arg Glu Leu Val Pro Ser Met Glu Glu Asp Ala Val Phe Phe Ala Ala
130 135 140

Ala Asp Asp Val Pro Arg Phe Phe Ala Gly Glu Ala Gln Asn Arg Cys
145 150 155 160

Asn Gln Glu Asn Gln Ala Ala Arg Asp Val Val Gln Gly Gly Leu Arg
165 170 175

Ala Ala Ala Gly Ala Ala Val Gly Phe Gly Gly Val Glu Ala Val Phe
180 185 190

Gln Asp Val Glu Val Glu Arg Ala Gln Val Phe Arg Ala Glu Arg Asn
195 200 205

Asn Val Phe His Gly Glu Val Glu Gly Ile Ala Arg Ile Val Thr Ala
210 215 220

Cys Gln Thr Leu Leu Gln Pro Pro Arg Gln Tyr Gln Gly Val Ala Val
225 230 235 240

Asp Phe His His Ile Arg Leu Leu His Gly Ile Phe Asn Arg Ile Lys
245 250 255

Val Ala Gln Ile Gly Lys Gln Glu Ala Gln Gly Ile Ala Asp Ala Ala
260 265 270

Val Ala Phe Gly Asn Ala Phe Glu Asp Phe Phe Gly Asn Arg Gln Phe
275 280 285

Ala Ala Val Ile Gly Gly Cys Arg Pro Gln Ala Gln Asp Val Arg Ala
290 295 300

Glu Phe Val Ile Asp Phe Leu Arg Arg Asp Asp Val Ala Asp Gly Phe

305	310	315	320
Arg His Phe Ala Ala Val Leu Val Asn His Glu Thr Val Gly Gln Gln			
	325	330	335
Leu Phe Ile Arg Cys Ala Ser His Gly			
	340	345	
<210> 877			
<211> 777			
<212> DNA			
<213> Neisseria meningitidis			
<400> 877			
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<210> 878			
<211> 258			
<212> PRT			
<213> Neisseria meningitidis			
<400> 878			
Leu His Gly Arg Thr Asp Gly Phe Val Gly Ala Gln Arg Leu Asp Gly			
1	5	10	15
Gly Gly Tyr Arg Phe Ala Gly Phe Ala Asp Cys Arg Pro Phe Phe His			
	20	25	30
Gln Phe Gly Phe Gly Phe Val Asp Gly Arg Glu Leu Val Pro Ser			
	35	40	45
Met Glu Glu Asp Ala Val Xaa Phe Ala Ala Xaa Asp Val Pro Arg			
	50	55	60
Phe Phe Ala Gly Glu Ala Gln Asn Arg Cys Asn Gln Glu Asn Gln Thr			
	65	70	75
Ala Cys Asp Val Ile Gln Gly Ser Leu Cys Ala Ala Ala Cys Met Ala			
	85	90	95
Val Cys Phe Gly Gly Val Glu Ala Val Phe Gln Asp Val Glu Val Glu			
	100	105	110

Arg Thr Gln Val Phe Arg Ala Glu Arg Asn Xaa Val Phe Tyr Gly Lys
115 120 125

Val Glu Xaa Ile Thr Arg Ile Val Ile Ala Cys Gln Thr Leu Leu Gln
130 135 140

Leu Thr Cys Gln Tyr His Gly Val Ala Val Asp Phe His His Ile Arg
145 150 155 160

Leu Leu His Gly Ile Phe Asn Arg Ile Lys Val Ala Gln Val Gly Lys
165 170 175

Gln Lys Ala Gln Gly Ile Ala Asp Thr Ala Val Ala Phe Gly Tyr Ala
180 185 190

Phe Glu Asp Phe Phe Gly Asn Arg Gln Phe Ala Ala Val Ile Gly Arg
195 200 205

Cys Arg Pro Gln Ala Gln Asp Val Cys Ala Glu Phe Val Ile Asn Leu
210 215 220

Leu Arg Cys Asn Asp Val Ala Asp Gly Phe Arg His Phe Phe Ala Phe
225 230 235 240

Ala Val Asp Asn Glu Thr Met Gly Gln Gln Leu Phe Ile Arg Arg Ala
245 250 255

Thr His

<210> 879

<211> 1035

<212> DNA

<213> Neisseria meningitidis

<400> 879

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actggctta gcggcaacgg caagttcgct gcctactttc acttctcgctt tagacaccag 180
caaagcaaag cgcaattctt cgcccaaagc attcagatag cggccattt cttccggcgc 240
gttaatttcg gcttcggctt gcaaggacga accgacggtt ttgtcggcgc gcaaaggctc 300
gatggcggcg gttaccgctt cgcgggcttc gcggattgcc gtccatttt tcaccagtcc 360
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ttctgcgccg ccggcgtatga tggcccacgc ttcttcgccc gtgaagcaca aaatcgggtc 480
aatcaagaga accaggctgc gcgtgatgtt gtacaggcgc gtttgcgcgc tgccggggc 540
gcggctgtcg gctttgtgg tatagaggcg gtctttcagg atatcgaggt agaacgcgcc 600
caagtcttcc gagcagaaaag aaaccatttc tttcacggca aagtggaaagg cataacgcgg 660
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gatttccacc atatccgcct gttgcacggc atcttcata ggattgaagt cgctcaagtt 780
ggcaaacaaa aagctcaagg tattgcggat acggcggttag ctttcgggtt cgcgcgttgc 840
gatttcttgc gaaatcgcca attcgcgcgt gtaatcggtt gatgccgcac acaggcgcag 900
gatgtccgcg ccgaactcggt tatacacttc ttgcggcgcg acgacgttgc cgatggattt 960
cgacatttttgc cggccgtttt gatccaccac gaaaccatgg gtcagcagttt gtttgcgtt 1020
cgccgcgaccc attga 1035

<210> 880
<211> 344
<212> PRT
<213> Neisseria meningitidis

<400> 880

Met Ala Arg Phe Ala Phe Ser Ala Asp Ile Leu Cys Thr Ala Phe Ala
1 5 10 15

Asp Gly Phe Met Ala Cys Asn Arg Ala His Ile Ala Gly Val Val Pro
20 25 30

Ala Ala Phe Ala Phe Phe Thr Ile Thr Gly Phe Ser Gly Asn Gly Lys
35 40 45

Phe Ala Ala Tyr Phe His Phe Cys Phe Arg His Gln Gln Ser Lys Ala
50 55 60

Gln Phe Phe Ala Gln Ser Ile Gln Ile Ala Gly His Phe Phe Arg Arg
65 70 75 80

Gly Asn Phe Gly Phe Gly Leu Gln Gly Arg Thr Asp Gly Phe Val Gly
85 90 95

Ala Gln Arg Leu Asp Gly Gly Tyr Arg Phe Ala Gly Phe Ala Asp
100 105 110

Cys Arg Pro Phe Phe His Gln Phe Gly Phe Gly Phe Val Asp Gly
115 120 125

Arg Glu Leu Val Pro Ser Met Glu Lys His Ala Val Phe Cys Ala Ala
130 135 140

Ala Asp Asp Val Pro Arg Phe Phe Ala Gly Glu Ala Gln Asn Arg Cys
145 150 155 160

Asn Gln Glu Asn Gln Ala Ala Arg Asp Val Val Gln Gly Gly Leu Arg
165 170 175

Ala Ala Ala Gly Ala Ala Val Gly Phe Gly Gly Ile Glu Ala Val Phe
180 185 190

Gln Asp Ile Glu Val Glu Arg Ala Gln Val Phe Arg Ala Glu Arg Asn
195 200 205

His Phe Phe His Gly Lys Val Glu Gly Ile Thr Arg Ile Lys Ile Thr
210 215 220

Gly Asn Ala Phe Leu Gln Pro Pro Cys Gln His Gln Gly Ile Ala Val
225 230 235 240

Asp Phe His His Ile Arg Leu Leu His Gly Ile Phe Asn Arg Ile Glu
245 250 255

Val Ala Gln Val Gly Lys Gln Lys Ala Gln Gly Ile Ala Asp Thr Ala

260

265

270

Val Ala Phe Gly Tyr Ala Leu Glu Asp Phe Phe Gly Asn Arg Gln Phe
275 280 285

Ala Ala Val Ile Gly Gly Cys Arg Pro Gln Ala Gln Asp Val Arg Ala
290 295 300

Glu Leu Val Ile His Phe Leu Arg Arg Asp Asp Val Ala Asp Gly Phe
305 310 315 320

Arg His Phe Ala Pro Val Leu Ile His His Glu Thr Met Gly Gln Gln
325 330 335

Leu Phe Val Arg Arg Ala Thr His
340

<210> 881

<211> 1149

<212> DNA

<213> Neisseria gonorrhoeae

<400> 881

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aggattgtcg ataaattcgt tattccttacc gcccggaaaagc agcctggcgt ccgcgcgttag 180
ggcgtaataa tccaaaatat ggccgggttcgc gcataactgccc atattgttgc ggataagccc 240
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gcgttccaaa ggccggaaata tcggggttcaa accgacataa gtattgacgg catagaccac 360
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aacacccaac gtgttaattga ggccggatgaag atgcccggac aaggggatcga actgtgcgc 540
tttgtacata tcgctgtcaa gtcgtgttt caactcggct ttatcccaa gttgataatg 600
actcgcaccg taatgccgtt gggcgtgttc atgcaactgca tgcaacttt cccaatgctg 660
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actaaaataa taagaaggca gatattcttg aaaatcaggg cgaatcatgg tgtttgcctt 1080
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<210> 882

<211> 382

<212> PRT

<213> Neisseria gonorrhoeae

<400> 882

Met Arg Asp Lys Val Gly Gly Asn Ile Ala Leu Pro Ala Pro Arg Ile
1 5 10 15

Phe Asp Ser Asn Ile Gly Lys Leu Arg Lys Asn Phe Lys His Ile Leu

20 25 30

Ala Asp Lys Leu Gly His Thr Arg Arg Ile Val Asp Lys Phe Val Ile
35 40 45

Leu Thr Ala Glu Lys Gln Pro Ala Val Arg Ala Glu Ala Val Ile Ile
50 55 60

Gln Asn Met Ala Val Val Ala Tyr Cys His Ile Val Ala Asp Lys Pro
65 70 75 80

Phe Cys Ala Arg Ala Gln Gly Phe Gly Gly Asn Asn Lys Gly Ala Asp
85 90 95

Gly Asn Arg Leu Ala Phe Gln Arg Pro Glu Tyr Arg Val Gln Thr Asp
100 105 110

Ile Ser Ile Asp Gly Ile Asp His Ile Phe Thr Leu Asp Ala Ala Phe
115 120 125

Gly Arg Val Asn Gln Pro Thr Val Leu Ile Arg Phe Asp Ala Arg His
130 135 140

Arg Gly Leu Leu Glu Asn Leu Arg Ala Gly Phe Gly Ser Gly Ala Gly
145 150 155 160

Asn Thr Gln Arg Val Ile Glu Arg Met Lys Met Pro Gly Gln Gly Ile
165 170 175

Glu Leu Cys Ala Leu Val His Ile Ala Val Lys Leu Leu Phe Gln Leu
180 185 190

Gly Phe Ile Pro Lys Leu Ile Met Thr Arg Thr Val Met Pro Leu Gly
195 200 205

Val Phe Met Pro Leu Leu Gln Leu Phe Pro Met Leu Arg Thr Asp Gly
210 215 220

Asn Arg Gly Ile Thr Ala Leu Pro Ile Ala Ile Asp Gly Met Phe Ala
225 230 235 240

Asp Ala Phe Val His Gln Phe Asp Arg Leu Gln Arg Leu Leu Pro Lys
245 250 255

Pro Leu Arg Leu Leu Gln Ala Asp Leu Phe Phe Asn Phe Pro His Thr
260 265 270

Ala Gly Val Val Ala Asp Asn Leu Pro Ala Thr Pro Ala Gly Arg Ala
275 280 285

Glu Ala Asp Thr Cys Gly Phe Gln Asn Asp Gly Phe Met Ser Val Phe
290 295 300

Arg Gln Arg Gln Cys Gly Thr Gln Thr Ala Gln Thr Ala Ala Asp Asn
305 310 315 320

Ala Gly Phe Gly Phe Gln Thr Ala Leu Glu Phe Arg Ile Asn Ser Met
325 330 335

Arg Ile Asn Arg Thr Lys Ile Ile Arg Arg Gln Ile Phe Leu Lys Ile
340 345 350

Arg Ala Asn His Cys Val Cys Phe Ile Gly Tyr Ile Phe Gly Arg Asn
355 360 365

Asp Thr Asp Cys Arg Ala Ile Ser Ser Lys Gln Lys Ile Gly
370 375 380

<210> 883

<211> 1149

<212> DNA

<213> Neisseria meningitidis

<400> 883

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atcggcaagc tgccggaaaaa cttaagcat atcttggcgg acaagctcggt tcatacgctc 120
aggattgtcg ataaaactcgt tatttcgtacc gccggaaaagc agtctggcgtt ccgcgcgtgag 180
gcccccaagg gtcgggttgcgc aataataaaag gtgctgacag caatcgccctt 300
gtgttccaaa ggcggaaata tcgggttcaa acctgcataa gtattgacag catagaccac 360
attttgacac tcgacgctgc cttcgggcgtt gtaaaccagc caaccgtttt gatgcgggttc 420
gatgcacgatc atcggggatt gctcgaaaat ctgcgcacccg gcttcggcag cggcacgagc 480
gatgcccggaa gtgttaagtga gcggatgcag gtgtccggat aagggggtcga attgtgccc 540
tttgtacata tcgctgtcaa gctgctgtttt caactcggctt ttatcccaa gttgataatg 600
actcgcacccg taatgccgtt gggcgtgttc atgccactgc tgcaactctt cccaatgctg 660
cgacggacgc gcaaccgtgg cataaccgcgc ctgccaatca caatcgacgg catgtttgcg 720
gacgcgttcg tccaccagtt cgaccgcctg caaagactgt tgccaaaacc attgcgcctg 780
ctccaaagccgc acctgtttttt caatttccccc cataccgcag ncgtaatcgc tgataaacctg 840
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atgtccctgc tccgccaagg gcaatgcagt qcacaaacca cccaatccgc cgccgatgtat 960
acaggtatcg gttttcagac ggcatgtaa gttcggataa acagtatgag gattaaccga 1020
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atcaggtgtta tttcggacg gaatgataca ggctgtcggg ccatatcgatc cawacagaaa 1140
atcgggttga 1149

<210> 884

<211> 382

<212> PRT

<213> Neisseria meningitidis

<400> 884

Met Arg Asp Lys Val Gly Gly Asn Val Ala Leu Pro Ala Pro Arg Ile
1 5 10 15

Phe Asp Phe Asp Ile Gly Lys Leu Arg Lys Asn Phe Lys His Ile Leu
20 25 30

Ala Asp Lys Leu Gly His Thr Leu Arg Ile Val Asp Lys Leu Val Ile
35 40 45

Leu Thr Ala Glu Lys Gln Ser Ala Val Arg Ala Glu Ala Val Ile Ile

50 55 60
Gln Asn Met Ala Val Val Ala Tyr Cys His Ile Val Thr Asp Lys Pro
65 70 75 80
Phe Cys Ala Arg Pro Gln Gly Phe Gly Arg Asn Asn Lys Gly Ala Asp
85 90 95
Ser Asn Arg Leu Ala Phe Gln Arg Pro Glu Tyr Arg Val Gln Thr Cys
100 105 110
Ile Ser Ile Asp Ser Ile Asp His Ile Phe Ala Leu Asp Ala Ala Phe
115 120 125
Gly Arg Val Asn Gln Pro Thr Val Leu Met Arg Phe Asp Ala Arg His
130 135 140
Arg Gly Leu Leu Glu Asn Leu Arg Thr Gly Phe Gly Ser Gly Thr Ser
145 150 155 160
Asp Ala Gln Ser Val Ser Glu Arg Met Gln Val Ser Gly Xaa Gly Val
165 170 175
Glu Leu Cys Pro Leu Val His Ile Ala Val Lys Leu Leu Phe Gln Leu
180 185 190
Gly Phe Ile Pro Lys Leu Ile Met Thr Arg Thr Val Met Pro Leu Gly
195 200 205
Val Phe Met Pro Leu Leu Gln Leu Phe Pro Met Leu Arg Thr Asp Gly
210 215 220
Asn Arg Gly Ile Thr Ala Leu Pro Ile Thr Ile Asp Gly Met Phe Ala
225 230 235 240
Asp Ala Phe Val His Gln Phe Asp Arg Leu Gln Arg Leu Leu Pro Lys
245 250 255
Pro Leu Arg Leu Leu Gln Ala Asp Leu Phe Phe Asn Phe Pro His Thr
260 265 270
Ala Xaa Val Ile Ala Asp Asn Leu Pro Ala Thr Pro Ser Arg Arg Ala
275 280 285
Glu Thr Asp Thr Arg Gly Phe Gln His Asn Arg Phe Met Ser Leu Leu
290 295 300
Arg Gln Gly Gln Cys Ser Ala Gln Thr Thr Gln Ser Ala Ala Asp Asp
305 310 315 320
Thr Gly Ile Gly Phe Gln Thr Ala Leu Lys Phe Arg Ile Asn Ser Met
325 330 335
Arg Ile Asn Arg Thr Glu Ile Ile Arg Arg Gln Ile Phe Leu Lys Ile
340 345 350
Arg Ala Asn His Cys Val Cys Phe Ile Arg Cys Ile Phe Gly Arg Asn

355

360

365

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370 375 380

<210> 885

<211> 1149

<212> DNA

<213> Neisseria meningitidis

<400> 885

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<210> 886

<211> 382

<212> PRT

<213> Neisseria meningitidis

<400> 886

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20 25 30

Ala Asp Lys Leu Gly His Thr Arg Gly Ile Val Asp Lys Leu Val Ile
35 40 45

Leu Thr Ala Glu Lys Gln Ser Ala Val Arg Ala Glu Ala Val Ile Ile
50 55 60

Gln Asn Met Thr Val Val Ala Tyr Cys His Ile Val Ala Asp Lys Pro
65 70 75 80

Phe Cys Thr Arg Ala Gln Gly Phe Cys Gly Asn Asn Lys Gly Ala Asp
85 90 95

Ser Asn Arg Leu Ala Leu Gln Arg Leu Glu Tyr Arg Ile Gln Thr Gly
100 105 110

Ile Ser Ile Asp Gly Val His Gln Ile Phe Ala Phe Asp Ala Ala Phe
115 120 125

Gly Gly Val Asn Gln Pro Thr Val Leu Ile Arg Phe Asn Ala Tyr His
130 135 140

Gly Arg Met Leu Lys Asn Leu Arg Thr Ser Phe Gly Ser Gly Ala Gly
145 150 155 160

Asp Ala Gln Arg Val Ile Glu Arg Met Glu Met Pro Gly Gln Gly Ile
165 170 175

Glu Leu Cys Ala Leu Val His Ile Ala Val Lys Leu Leu Leu Gln Phe
180 185 190

Ser Val Ile Pro Glu Leu Ile Met Ser Cys Thr Val Ile Phe Leu Gly
195 200 205

Val Leu Met Pro Leu Leu Gln Phe Phe Pro Met Leu Arg Thr Asp Gly
210 215 220

Asn Arg Gly Ile Thr Ala Leu Pro Ile Ala Ile Asn Gly Met Phe Ala
225 230 235 240

Asp Ala Phe Val His Gln Phe Asp Arg Leu Gln Arg Leu Leu Pro Lys
245 250 255

Pro Leu Arg Leu Leu Gln Thr Asp Leu Phe Phe Asn Phe Leu His Thr
260 265 270

Ala Gly Val Ile Ala Asp Asn Leu Pro Ala Thr Pro Ser Arg Arg Ala
275 280 285

Glu Thr Asp Thr Arg Gly Phe Gln His Asn Arg Phe Met Ser Leu Leu
290 295 300

Arg Gln Gly Gln Cys Ser Ala Gln Thr Thr Gln Ser Ala Ala Asp Asp
305 310 315 320

Thr Gly Ile Gly Phe Gln Thr Ala Leu Lys Phe Arg Ile Asn Ser Met
325 330 335

Arg Ile Asn Arg Thr Glu Ile Ile Arg Arg Gln Ile Phe Leu Lys Ile
340 345 350

Arg Ala Asn His Cys Val Cys Phe Ile Gly Tyr Ile Phe Gly Arg Asn
355 360 365

Asp Thr Gly Cys Arg Ala Ile Ser Ser Lys Gln Lys Ile Gly
370 375 380

<211> 1497
<212> DNA
<213> Neisseria gonorrhoeae

<400> 887
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<210> 888
<211> 498
<212> PRT
<213> Neisseria gonorrhoeae

<400> 888
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Leu Arg Asp Asp Met Gln Ala Lys His Tyr Glu Pro Gly Gly Lys Tyr
35 40 45
His Leu Phe Gly Asn Ala Arg Gly Ser Val Lys Asn Arg Val Cys Ala
50 55 60
Val Gln Thr Phe Asp Ala Thr Ala Val Gly Pro Ile Leu Pro Ile Thr
65 70 75 80
His Glu Arg Thr Gly Phe Glu Gly Val Ile Gly Tyr Glu Thr His Phe
85 90 95
Ser Gly His Gly His Glu Val His Ser Pro Phe Asp Asn His Asp Ser

100 105 110
Lys Ser Thr Ser Asp Phe Ser Gly Gly Val Asp Gly Gly Phe Thr Val
115 120 125
Tyr Gln Leu His Arg Thr Gly Ser Glu Ile His Pro Ala Asp Gly Tyr
130 135 140
Asp Gly Pro Gln Gly Gly Tyr Pro Glu Pro Gln Gly Ala Arg Asp
145 150 155 160
Ile Tyr Ser Tyr His Ile Lys Gly Thr Ser Thr Lys Thr Lys Ile Asn
165 170 175
Thr Val Pro Gln Ala Pro Phe Ser Asp Arg Trp Leu Lys Glu Asn Ala
180 185 190
Gly Ala Ala Ser Gly Phe Leu Ser Arg Ala Asp Glu Ala Gly Lys Leu
195 200 205
Ile Trp Glu Asn Asp Pro Asp Lys Asn Trp Arg Ala Asn Arg Met Asp
210 215 220
Asp Ile Arg Gly Ile Val Gln Gly Ala Val Asn Pro Phe Leu Thr Gly
225 230 235 240
Phe Gln Gly Val Gly Ile Gly Ala Ile Thr Asp Ser Ala Val Ser Pro
245 250 255
Val Thr Asp Thr Ala Ala Gln Gln Thr Leu Gln Gly Ile Asn Asp Leu
260 265 270
Gly Asn Leu Ser Pro Glu Ala Gln Leu Ala Ala Ala Ser Leu Leu Gln
275 280 285
Asp Ser Ala Phe Ala Val Lys Asp Gly Ile Asn Ser Ala Arg Gln Trp
290 295 300
Ala Asp Ala His Pro Asn Ile Thr Ala Thr Ala Gln Thr Ala Leu Ala
305 310 315 320
Val Ala Glu Ala Ala Gly Thr Val Trp Arg Gly Lys Lys Val Glu Leu
325 330 335
Asn Pro Thr Lys Trp Asp Trp Val Lys Asn Thr Gly Tyr Lys Lys Pro
340 345 350
Ala Ala Arg His Met Gln Thr Val Asp Gly Glu Met Ala Gly Gly Asn
355 360 365
Arg Pro Pro Lys Ser Ile Thr Ser Glu Gly Lys Ala Asn Ala Ala Thr
370 375 380
Tyr Pro Lys Leu Val Asn Gln Leu Asn Glu Gln Asn Leu Asn Asn Ile
385 390 395 400
Ala Ala Gln Asp Pro Arg Leu Ser Leu Ala Ile His Glu Gly Lys Lys

405

410

415

Asn Phe Pro Ile Gly Thr Ala Thr Tyr Glu Glu Ala Asp Arg Leu Gly
420 425 430

Lys Ile Trp Val Gly Glu Gly Ala Arg Gln Thr Ser Gly Gly Gly Trp
435 440 445

Leu Ser Arg Asp Gly Thr Arg Gln Tyr Arg Pro Pro Thr Glu Lys Lys
450 455 460

Ser Gln Phe Ala Thr Thr Gly Ile Gln Ala Asn Phe Glu Thr Tyr Thr
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Ile Asp Ser Asn Glu Lys Arg Asn Lys Ile Lys Asn Gly His Leu Asn
485 490 495

Ile Arg

<210> 889

<211> 1452

<212> DNA

<213> Neisseria meningitidis

<400> 889

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gccaacaat gggctgatgc ccatccaaat ataacagcta ctgccccaaac tgccctttcc 960
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<210> 890

<211> 483

<212> PRT

<213> Neisseria meningitidis

<400> 890

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20 25 30

Leu Arg Asp Asp Met Gln Ala Lys His Tyr Glu Pro Gly Gly Lys Tyr
35 40 45

His Leu Phe Gly Asn Ala Arg Gly Ser Val Lys Lys Arg Val Tyr Ala
50 55 60

Val Gln Thr Phe Asp Ala Thr Ala Val Ser Pro Val Leu Pro Ile Thr
65 70 75 80

His Glu Arg Thr Gly Phe Glu Gly Val Ile Gly Tyr Glu Thr His Phe
85 90 95

Ser Gly His Gly His Glu Val His Ser Pro Phe Asp His His Asp Ser
100 105 110

Lys Ser Thr Ser Asp Phe Ser Gly Gly Val Asp Gly Gly Phe Thr Val
115 120 125

Tyr Gln Leu His Arg Thr Gly Ser Glu Ile His Pro Glu Asp Gly Tyr
130 135 140

Asp Gly Pro Gln Gly Ser Asp Tyr Pro Pro Pro Gly Gly Ala Arg Asp
145 150 155 160

Ile Tyr Ser Tyr Tyr Val Lys Gly Thr Ser Thr Lys Thr Lys Thr Asn
165 170 175

Ile Val Pro Gln Ala Pro Phe Ser Asp Arg Trp Leu Lys Glu Asn Ala
180 185 190

Gly Ala Ala Ser Gly Phe Phe Ser Arg Ala Asp Glu Ala Gly Lys Leu
195 200 205

Ile Trp Glu Ser Asp Pro Asn Lys Asn Trp Trp Ala Asn Arg Met Asp
210 215 220

Asp Val Arg Gly Ile Val Gln Gly Ala Val Asn Pro Phe Leu Met Gly
225 230 235 240

Phe Gln Gly Val Gly Ile Gly Ala Ile Thr Asp Ser Ala Val Ser Pro
245 250 255

Val Thr Asp Thr Ala Ala Gln Gln Thr Leu Gln Gly Ile Asn Asp Leu
260 265 270

Gly Lys Leu Ser Pro Glu Ala Gln Leu Ala Ala Ser Leu Leu Gln

275	280	285
Asp Ser Ala Phe Ala Val Lys Asp Gly Ile Asn Ser Ala Lys Gln Trp		
290	295	300
Ala Asp Ala His Pro Asn Ile Thr Ala Thr Ala Gln Thr Ala Leu Ser		
305	310	315
Ala Ala Glu Ala Ala Gly Thr Val Trp Arg Gly Lys Lys Val Glu Leu		
325	330	335
Asn Pro Thr Lys Trp Asp Trp Val Lys Asn Thr Gly Tyr Lys Lys Pro		
340	345	350
Ala Ala Arg His Met Gln Thr Leu Asp Gly Glu Met Ala Gly Gly Asn		
355	360	365
Lys Pro Ile Lys Ser Leu Pro Asn Ser Ala Ala Glu Lys Arg Lys Gln		
370	375	380
Asn Phe Glu Lys Phe Asn Ser Asn Trp Ser Ser Ala Ser Phe Asp Ser		
385	390	400
Val His Lys Thr Leu Thr Pro Asn Ala Pro Gly Ile Leu Ser Pro Asp		
405	410	415
Lys Val Lys Thr Arg Tyr Thr Ser Leu Asp Gly Lys Ile Thr Ile Ile		
420	425	430
Lys Asp Asn Glu Asn Asn Tyr Phe Arg Ile His Asp Asn Ser Arg Lys		
435	440	445
Gln Tyr Leu Asp Ser Asn Gly Asn Ala Val Lys Thr Gly Asn Leu Gln		
450	455	460
Gly Lys Gln Ala Lys Asp Tyr Leu Gln Gln Thr His Ile Arg Asn		
465	470	475
Leu Asp Lys		

<210> 891
<211> 1155
<212> DNA
<213> Neisseria meningitidis

<400> 891
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gccccatttt cagaccgctg gctaaaagaa aatgccggtg ccgcctctgg tttttcagc 600
cgtgctgatg aaggcaggaaa actgatatgg gaaagcgacc ccaataaaaaa ttggtgggct 660

aaccgtatgg atgatattcg cgccatcgac caaggtgcgg ttaatccttt ttaatgggt 720
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<210> 892

<211> 385

<212> PRT

<213> Neisseria meningitidis

<400> 892

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20 25 30

Leu Arg Asp Asp Met Gln Ala Lys His Tyr Glu Pro Gly Gly Lys Tyr
35 40 45

His Leu Phe Gly Asn Ala Arg Gly Ser Val Lys Asn Arg Val Tyr Ala
50 55 60

Val Gln Thr Phe Asp Ala Thr Ala Val Gly Pro Ile Leu Pro Ile Thr
65 70 75 80

His Glu Arg Thr Gly Phe Glu Gly Ile Ile Gly Tyr Glu Thr His Phe
85 90 95

Ser Gly His Gly His Glu Val His Ser Pro Phe Asp Asn His Asp Ser
100 105 110

Lys Ser Thr Ser Asp Phe Ser Gly Gly Val Asp Gly Gly Phe Thr Val
115 120 125

Tyr Gln Leu His Arg Thr Gly Ser Glu Ile His Pro Glu Asp Gly Tyr
130 135 140

Asp Gly Pro Gln Gly Ser Asp Tyr Pro Pro Pro Gly Gly Ala Arg Asp
145 150 155 160

Ile Tyr Ser Tyr Tyr Val Lys Gly Thr Ser Thr Lys Thr Lys Ser Asn
165 170 175

Ile Val Pro Arg Ala Pro Phe Ser Asp Arg Trp Leu Lys Glu Asn Ala
180 185 190

Gly Ala Ala Ser Gly Phe Phe Ser Arg Ala Asp Glu Ala Gly Lys Leu

195	200	205
Ile Trp Glu Ser Asp Pro Asn Lys Asn Trp Trp Ala Asn Arg Met Asp		
210	215	220
Asp Ile Arg Gly Ile Val Gln Gly Ala Val Asn Pro Phe Leu Met Gly		
225	230	235
Phe Gln Gly Val Gly Ile Gly Ala Ile Thr Asp Ser Ala Val Ser Pro		
245	250	255
Val Thr Asp Thr Ala Ala Gln Gln Thr Leu Gln Gly Ile Asn His Leu		
260	265	270
Gly Asn Leu Ser Pro Glu Ala Gln Leu Ala Ala Ala Thr Ala Leu Gln		
275	280	285
Asp Ser Ala Phe Ala Val Lys Asp Gly Ile Asn Ser Ala Arg Gln Trp		
290	295	300
Ala Asp Ala His Pro Asn Ile Thr Ala Thr Ala Gln Thr Ala Leu Ala		
305	310	315
Val Ala Glu Ala Ala Thr Thr Val Trp Gly Gly Lys Lys Val Glu Leu		
325	330	335
Asn Pro Thr Lys Trp Asp Trp Val Lys Asn Thr Gly Tyr Lys Thr Pro		
340	345	350
Ala Val Arg Thr Met His Thr Leu Asp Gly Glu Met Ala Gly Gly Asn		
355	360	365
Arg Pro Pro Lys Ser Ile Thr Ser Asn Ser Lys Ala Asp Ala Ser Thr		
370	375	380
Gln		
385		

<210> 893
<211> 768
<212> DNA
<213> *Neisseria gonorrhoeae*

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ttttgtgcca cgatctgcgc cagcttgcgg gttgtatcga ttggactttc cgcccggtgc 720
gcgacaatgg cgcgacaaat ctggcgcta aaccgcttt caccataa 768

<210> 894
<211> 255
<212> PRT
<213> Neisseria gonorrhoeae

<400> 894
Met Phe His His Lys Gly Ile Ala Arg Asn Arg Arg Met Glu Val Leu
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Phe Phe Cys Arg Arg Pro Asp Arg Phe Val Ile Arg Gln Thr Arg Leu
20 25 30

Leu Gln Pro His Leu Arg Ile Ile Leu Leu Gln Gly Asp Phe Leu Phe
35 40 45

Phe Arg Leu Val Gln Ser Cys Glu Val Glu Pro Val Leu Val Leu Leu
50 55 60

His His Asn Gly Lys Ser Gly Asn Ala His Arg Lys Gln Gln Lys Glu
65 70 75 80

Ile Arg Phe Val His Cys Arg Ser Asp Val Phe Leu Cys Tyr Tyr Ser
85 90 95

Gly Ile Gly Pro Ala Val Arg Ser Ala Thr Arg Lys Thr Ala Leu Leu
100 105 110

Ala Leu Gly Leu Ala Ala Ile Ser Ala Ser Pro Gly Phe Asn Ala Leu
115 120 125

Pro Thr Ile Phe Arg Gly Ser Gly Lys Ser Ala Ser Leu Thr Ala
130 135 140

Ala Gln Leu Gly Arg Gly Ser Cys Cys Glu Tyr Phe Leu Thr Asn Cys
145 150 155 160

Phe Thr Met Arg Ser Ser Asn Glu Trp Lys Ala Met Thr Ala Lys Arg
165 170 175

Pro Pro Ser Phe Arg Arg His Met Thr Cys Gly Asn Thr Ala Pro Thr
180 185 190

Ser Ser Ser Ser Arg Leu Ile Lys Met Arg Ile Ala Trp Lys Val Arg
195 200 205

Val Ala Gly Ser Cys Pro Arg Ser Arg Val Arg Thr Phe Cys Ala Thr
210 215 220

Ile Cys Ala Ser Leu Arg Val Val Ser Ile Gly Leu Ser Ala Arg Cys
225 230 235 240

Ala Thr Met Ala Arg Thr Ile Trp Arg Leu Asn Arg Ser Ser Pro

245

250

255

<210> 895
<211> 768
<212> DNA
<213> Neisseria meningitidis

<400> 895
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ttttgtgcca cgatctgcgc cagttgcgg gttgtatcga ttggacttc cgcccggtgc 720
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<210> 896
<211> 255
<212> PRT
<213> Neisseria meningitidis

<400> 896
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20 25 30

Leu Gln Pro His Leu Arg Ile Ile Leu Leu Gln Gly Asp Phe Leu Phe
35 40 45

Phe Arg Leu Ile Gln Ser Cys Glu Ile Glu Pro Val Leu Val Leu Leu
50 55 60

His His Asn Gly Lys Ser Gly Asn Ala His Arg Lys Gln Gln Lys Glu
65 70 75 80

Ile Gln Phe Val His Cys His Ser Asp Val Phe Leu Cys Asp Cys Ser
85 90 95

Gly Ile Gly Pro Ala Val Arg Ser Ala Thr Arg Lys Thr Ala Leu Leu
100 105 110

Ala Leu Gly Leu Ala Ala Ile Ser Ala Ser Pro Gly Phe Asn Ala Leu
115 120 125

Pro Thr Ile Phe Arg Gly Ser Ser Gly Lys Ser Ala Ser Leu Thr Ala
130 135 140

Ala Gln Arg Gly Arg Gly Ala Cys Cys Glu Tyr Phe Leu Thr Asn Cys
145 150 155 160

Phe Thr Met Arg Ser Ser Asn Glu Trp Lys Ala Met Thr Ala Lys Arg
165 170 175

Pro Pro Ser Phe Arg Arg His Met Thr Cys Gly Asn Thr Ala Pro Thr
180 185 190

Ser Ser Ser Arg Leu Ile Lys Met Arg Thr Ala Trp Lys Val Arg
195 200 205

Val Ala Gly Ser Cys Pro Arg Ser Arg Val Arg Thr Phe Cys Ala Thr
210 215 220

Ile Cys Ala Ser Leu Arg Val Val Ser Ile Gly Leu Ser Ala Arg Cys
225 230 235 240

Ala Thr Met Ala Arg Ala Ile Arg Arg Leu Asn Arg Ser Ser Pro
245 250 255

<210> 897

<211> 768

<212> DNA

<213> Neisseria meningitidis

<400> 897

atgctccacc ataaaggtat tgccccaaac cggcggatgg aggttttgtt tttctgccgc 60
cgccctgatc gcttcgttgt tcgccaaacg cgcctgttgc agcctcattt gcgcataatc 120
ctgctccaag gcgatttcct gtttttcgc cttatccaaa gctgtgaagt tgaggctgta 180
ctggtttgc tgcatacaca cggaaaaagc ggaaacgcac accgcaagca gcagaaggaa 240
attcaatttg ttcattgcca ttcagacgtt tttctctgtg attgttccgg tatcgaccg 300
gcagtccgct ccgcacacag caaaaaccgca cttctcgccc tcggattggc ggcaatttcc 360
gcctcaccccg gcttaatgc cctgcccgcg attttcaggg gcggctcggg caaatccgct 420
tccctgaccg cggcccagcg cggcaggggc gcgtgttgcg aatattttt gacaaactgc 480
ttcacaatgc ggtcttccaa cgaatggaaa gcaatgaccg ccaaacgtcc gccctttc 540
agacgacaca tgacctgcgg caatactgccc cctacttctt caagctcgcg gttataaaag 600
atgcggattt ccttggaggt ggcgcgtcgcg ggatctgccc cccgctcgcg agtacggacg 660
ttttgtgcca cgatctgcgc cagcttgcgg gttgtatcga ttggactttc cgcccggtgc 720
gcaacaatgg cgcgcgcaat ctggcggcta aaccgcttt caccataa 768

<210> 898

<211> 255

<212> PRT

<213> Neisseria meningitidis

<400> 898

Met Leu His His Lys Gly Ile Ala Arg Asn Arg Arg Met Glu Val Leu
1 5 10 15

Phe Phe Cys Arg Arg Pro Asp Arg Phe Val Val Arg Gln Thr Arg Leu
20 25 30

Leu Gln Pro His Leu Arg Ile Ile Leu Leu Gln Gly Asp Phe Leu Phe

35

40

45

Phe Arg Leu Ile Gln Ser Cys Glu Val Glu Pro Val Leu Val Leu Leu
 50 55 60

His His Asn Gly Lys Ser Gly Asn Ala His Arg Lys Gln Gln Lys Glu
 65 70 75 80

Ile Gln Phe Val His Cys His Ser Asp Val Phe Leu Cys Asp Cys Ser
 85 90 95

Gly Ile Gly Pro Ala Val Arg Ser Ala Thr Arg Lys Thr Ala Leu Leu
 100 105 110

Ala Leu Gly Leu Ala Ala Ile Ser Ala Ser Pro Gly Phe Asn Ala Leu
 115 120 125

Pro Ala Ile Phe Arg Gly Gly Ser Gly Lys Ser Ala Ser Leu Thr Ala
 130 135 140

Ala Gln Arg Gly Arg Gly Ala Cys Cys Glu Tyr Phe Leu Thr Asn Cys
 145 150 155 160

Phe Thr Met Arg Ser Ser Asn Glu Trp Lys Ala Met Thr Ala Lys Arg
 165 170 175

Pro Pro Ser Phe Arg Arg His Met Thr Cys Gly Asn Thr Ala Pro Thr
 180 185 190

Ser Ser Ser Arg Leu Ile Lys Met Arg Ile Ala Trp Lys Val Arg
 195 200 205

Val Ala Gly Ser Cys Pro Arg Ser Arg Val Arg Thr Phe Cys Ala Thr
 210 215 220

Ile Cys Ala Ser Leu Arg Val Val Ser Ile Gly Leu Ser Ala Arg Cys
 225 230 235 240

Ala Thr Met Ala Arg Ala Ile Trp Arg Leu Asn Arg Ser Ser Pro
 245 250 255

<210> 899

<211> 663

<212> DNA

<213> Neisseria gonorrhoeae

<400> 899

atgatagaag tcatacattt cttcgccgcc gaaacgcgca gacagttgc ttgtgccgac 60
 gtggacgat ttctgcataa tgccgcgcac atccaaagag gggtaaacat gggtatcatc 120
 ggcacggga gacgggccga ttttataagg ctgcgtattc agccgttcgt tcaaatcggt 180
 ttggccgcga tccaatgcct tcgcaatcac gaacggtttgc attgccgaac caggttcgat 240
 catatcggtt acggcacggt tgcgcgcgtt ttcgcgtgttgc gccccggccgg gtctgttggg 300
 atcgttaggcg ggcgtattgg ccaaggcgag gatccccccc gtgcgggcat ccaaaaccac 360
 caccgttccg gctttgcct gatggtattc gaccgccttg ttcaactttt cataggccaa 420
 ggtctgaatc ctctgatcga gggaaaggat gatgttttg ccgtttgcg gtgcatttatt 480
 gcgcggggag tccaagctgtt ccacaatattt gcccgtccgg tcccgcaaaa caacttccgc 540

gccgtcttcg ccatacaggc tgtcttcaag cgaaagttcc aaaccttcct gaccttgcc 600
gtcaatatcg gtaaatccga tgacgtgtgc aaacaggttg cccatcggtt aatggcgaaa 660
taa 663

<210> 900
<211> 220
<212> PRT
<213> Neisseria gonorrhoeae

<400> 900
Met Ile Glu Val Ile His Phe Phe Gly Ala Glu Thr Arg Arg Gln Phe
1 5 10 15

Ala Cys Ala Asp Val Gly Arg Phe Leu His Asn Ala Ala His Ile Gln
20 25 30

Arg Gly Val Asn Met Gly Ile Ile Ala His Gly Arg Arg Ser Asp Phe
35 40 45

Ile Arg Leu Arg Ile Gln Pro Phe Val Gln Ile Gly Phe Ala Arg Ile
50 55 60

Gln Cys Leu Arg Asn His Glu Arg Phe Asp Cys Arg Thr Arg Phe Asp
65 70 75 80

His Ile Gly Tyr Gly Thr Val Ala Pro Leu Phe Ala Val Cys Pro Ala
85 90 95

Gly Ser Val Gly Ile Val Gly Gly Arg Ile Gly Gln Gly Glu Asp Phe
100 105 110

Pro Arg Ala Gly Ile Gln Asn His His Arg Ser Gly Phe Cys Leu Met
115 120 125

Val Phe Asp Arg Leu Val Gln Leu Phe Ile Gly Gln Gly Leu Asn Pro
130 135 140

Leu Ile Glu Gly Lys Asp Asp Val Phe Ala Val Leu Arg Cys Phe Ile
145 150 155 160

Ala Arg Gly Val Gln Ala Val His Asn Ile Ala Leu Pro Val Pro Gln
165 170 175

Asn Asn Phe Arg Ala Val Phe Ala Ile Gln Ala Val Phe Lys Arg Lys
180 185 190

Phe Gln Thr Phe Leu Thr Phe Ala Val Asn Ile Gly Lys Ser Asp Asp
195 200 205

Val Cys Lys Gln Val Ala His Arg Val Met Ala Phe
210 215 220

<210> 901
<211> 660
<212> DNA

<213> Neisseria meningitidis

<400> 901

atgatagaag tcatacattt cttcgccacc gaaacgcgca gacagttgc ttgtgccgac 60
gttggacgat ttctgcatga tgccgcgac atccaaagag gggtaaacat gggtatcgcg 120
cacgggagac ggtccgattt tataaggctg cgtattcagc cggtcggtca aatcggttt 180
gcccgcattc aatgccttcg caatcacaaa cggtttgatt gccgaaccgg gttcgatcat 240
atcggttacg gcacgggtgc gcccgtgtc gctgtctgcc cggccgggccc tgttgggatc 300
taggcgggc gtattggcca aggcgaggat ttccccgtg cgggcattca araccaccac 360
cggtccggct tttgcctgtat ggtattcagc cgcctgttc aactcttcat aggccaagg 420
ctgaatcctc tgatcgaggg aaaggatgat gtcttgccg ttttcgggg cttaaktgcg 480
cggggagtcc aagctgtcca caatattgcc ctgccgtcc cgcaaaaacga ctccgcgc 540
gtcttcgcca tgcaagctgt cttcaagcga aagttccaaa ctttcctgac ctggccgtc 600
aatatcggtaa aatccgatga cgtgtgccc caggtgtaat ggcgtttaa 660

<210> 902

<211> 219

<212> PRT

<213> Neisseria meningitidis

<400> 902

Met Ile Glu Val Ile His Phe Phe Gly Thr Glu Thr Arg Arg Gln Phe
1 5 10 15

Ala Cys Ala Asp Val Gly Arg Phe Leu His Asp Ala Ala His Ile Gln
20 25 30

Arg Gly Val Asn Met Gly Ile Ala His Gly Arg Arg Ser Asp Phe Ile
35 40 45

Arg Leu Arg Ile Gln Pro Phe Val Gln Ile Gly Phe Ala Arg Ile Gln
50 55 60

Cys Leu Arg Asn His Lys Arg Phe Asp Cys Arg Thr Gly Phe Asp His
65 70 75 80

Ile Gly Tyr Gly Thr Val Ala Pro Leu Phe Ala Val Cys Pro Ala Gly
85 90 95

Pro Val Gly Ile Val Gly Arg Ile Gly Gln Gly Glu Asp Phe Pro
100 105 110

Arg Ala Gly Ile Gln Xaa His His Arg Ser Gly Phe Cys Leu Met Val
115 120 125

Phe Asp Arg Leu Val Gln Leu Phe Ile Gly Gln Gly Leu Asn Pro Leu
130 135 140

Ile Glu Gly Lys Asp Asp Val Phe Ala Val Phe Arg Gly Phe Xaa Ala
145 150 155 160

Arg Gly Val Gln Ala Val His Asn Ile Ala Leu Pro Val Pro Gln Asn
165 170 175

Asp Phe Arg Ala Val Phe Ala Met Gln Ala Val Phe Lys Arg Lys Phe
180 185 190

Gln Thr Phe Leu Thr Phe Ala Val Asn Ile Gly Lys Ser Asp Asp Val
195 200 205

Cys Lys Gln Val Ala His Arg Val Met Ala Phe
210 215

<210> 903

<211> 660

<212> DNA

<213> Neisseria meningitidis

<400> 903

atgatagaag tcatacattt ctgcggcacc gaaacgcgca gacagttgc ttgtgccgac 60
gttggacgt ttctgcattt tggccgcgcac atccaaagag gggtaaacat gggtatcg 120
cacgggagac ggtccgattt tataaggctg cgtattcagc cggttcgttca aatcggttt 180
gccgcattcc aatgccttcg caatcacaaa cggtttgatt gccgaaccgg gttcgatcat 240
atcggttacg gcacgggtgc ggcgctgttc gctgtctgcc cggccggggc tggtggatc 300
gttaggcgggc gtattggcca aggcgaggat ttccccgtg cgggcattcca aaaccaccac 360
cggtccggct tttgcctgat ggtattcgac cgcctgttc aactcttcat aggccaagg 420
ctgaatcctc ttagtgcaggaa aaggatgat gtcttgccc ttttcgggg ctttattgcg 480
cgggggagtcc aagctgtcca caatattgccc ctgcccgtcc cgcaaaaacga cttccgcgc 540
gtttcgcca tgcaggctgt ctcaagcga aagttccaaa ctttcctgac ctttgccgtc 600
aatatcggtta aatccgatga cgtgtgcaaaa caggttgccc atcggttaat ggcgtttaa 660

<210> 904

<211> 219

<212> PRT

<213> Neisseria meningitidis

<400> 904

Met Ile Glu Val Ile His Phe Phe Gly Thr Glu Thr Arg Arg Gln Phe
1 5 10 15

Ala Cys Ala Asp Val Gly Arg Phe Leu His Asp Ala Ala His Ile Gln
20 25 30

Arg Gly Val Asn Met Gly Ile Ala His Gly Arg Arg Ser Asp Phe Ile
35 40 45

Arg Leu Arg Ile Gln Pro Phe Val Gln Ile Gly Phe Ala Arg Ile Gln
50 55 60

Cys Leu Arg Asn His Lys Arg Phe Asp Cys Arg Thr Gly Phe Asp His
65 70 75 80

Ile Gly Tyr Gly Thr Val Ala Pro Leu Phe Ala Val Cys Pro Ala Gly
85 90 95

Pro Val Gly Ile Val Gly Arg Ile Gly Gln Gly Glu Asp Phe Pro
100 105 110

Arg Ala Gly Ile Gln Asn His His Arg Ser Gly Phe Cys Leu Met Val
115 120 125

Phe Asp Arg Leu Val Gln Leu Phe Ile Gly Gln Gly Leu Asn Pro Leu
130 135 140

Ile Glu Gly Lys Asp Asp Val Phe Ala Val Phe Arg Gly Phe Ile Ala
145 150 155 160

Arg Gly Val Gln Ala Val His Asn Ile Ala Leu Pro Val Pro Gln Asn
165 170 175

Asp Phe Arg Ala Val Phe Ala Met Gln Ala Val Phe Lys Arg Lys Phe
180 185 190

Gln Thr Phe Leu Thr Phe Ala Val Asn Ile Gly Lys Ser Asp Asp Val
195 200 205

Cys Lys Gln Val Ala His Arg Val Met Ala Phe
210 215

<210> 905

<211> 660

<212> DNA

<213> Neisseria gonorrhoeae

<400> 905

atgatagaag tcatacattt ctgcggcacc gaaacgcgca gacagttgc ttgtgccgac 60
gttggacgt ttctgcattga tgccgcgcac atccaaagag gggtaaacat gggtatcg 120
cacgggagac ggtccgattt tataaggctg cgtattcagc cggtcggtca aatcggttt 180
gccccatcc aatgccttcg caatcacaaa cggttgatt gccgaacctg gttcgatcat 240
atcggttacg gcacgggtgc gccgctgttc gctgtctgcc cggccggccc tgttggatc 300
gtaggcgggc gtattggcca aggcgaggat ttccccgtg cgggcatcca araccaccac 360
cgttccggct tttgcctgat ggtattcgac cgccttgttc aactcttcat aggccaagg 420
ctgaatcctc tgatcgaggg aaaggatgat gtcttgccg ttttcgggg ctttaktgcg 480
cggggagtcc aagctgtcca caatattgcc ctgcccgtcc cgcaaaaacga ctcccgccc 540
gtcttcgcca tgcaagctgt cttcaagcgaa aagttccaaa ctttcctgac ctggccgtc 600
aatatcggtt aatccgatga cgtgtgcaaaa caggttgccc atcggttaat ggcgtttaa 660

<210> 906

<211> 267

<212> PRT

<213> Neisseria gonorrhoeae

<400> 906

Met Pro Thr Arg Pro Thr Arg Ala Ala Asn Pro Pro Thr Pro Thr Thr
1 5 10 15

Trp Leu Gln Thr Ala Tyr Cys Pro Arg Pro Pro Tyr Arg Pro Pro Ser
20 25 30

Val Gln Thr His Thr Pro His Glu Pro Ala Ser Ser Thr Cys Ala Ala
35 40 45

Lys Ser Ala Asn Arg Arg Glu Asn Ser His Asn Ala Gln Pro Thr Tyr
50 55 60

Leu Leu His Pro Ser Asn Lys Met Pro Ser Glu Thr Glu Gln Thr Leu

65	70	75	80
Phe Arg Arg His Gln Ile Pro Pro Ser Cys Arg Gln Ser Val Val Val			
85	90		95
Met Thr Val Arg Thr Val Asp Met Thr Val Cys Asp Phe Leu Ile Gly			
100	105	110	
Cys Ile Ala His Ala Phe Asn Arg Ser Phe Lys Ala Asp Phe His Ala			
115	120	125	
Cys Gln Arg Met Val Ala Val His His Arg Leu Ala Val Gly Asn Ile			
130	135	140	
Gly Tyr Thr Ile Asp Asp Asn Ile Ala Gly Phe Arg Ile Val Arg Phe			
145	150	155	160
Lys His His Thr Asp Leu Asp Phe Asn Arg Glu Arg Ala Arg Ile Phe			
165	170	175	
Asn Thr Asp Gln Leu Arg Ile Met Leu Thr Glu Arg Ile Val Gly Arg			
180	185	190	
Lys Arg His Phe Asp Arg Ile Ala Gly Ile Leu Thr Val Gln Arg Leu			
195	200	205	
Phe His Gln Arg Glu Asn Ala Val Val Thr Ala Val Gln Ile Arg Asn			
210	215	220	
Arg Phe Phe Gly Phe Ile Gln Lys Leu Ile Val Gly Ile Ile His Leu			
225	230	235	240
Ile Met Gln Arg Asn His Gly Ile Phe Cys Asn Ser His Ile Cys Pro			
245	250	255	
Phe Arg Asn Ser Arg Leu Ile Thr Gly Ala Phe			
260	265		

<210> 907
 <211> 534
 <212> DNA
 <213> Neisseria meningitidis

<400> 907
 cgcaatcag tgggtgtat gaccgtgcgg gccgtggaca tgaccgtgt cgatttcctc 60
 atccggatgca tcgcgcacgc tttcaactgt agcctaaag cggattttca tgcctgccaa 120
 agatggttg ccgtccacca cccgccttgc gtcggcaaca tcggttacac gatagacgac 180
 aacatcgccc gtttcaggat cgtcggcttc aaacatcatg ccgacttca cttcaacagg 240
 gAACACGCC Gcatttcga tacggaccaa ctccggatcc tgctcgccga acgcacgtc 300
 gggcgcacgc gcccacatcga ccgtatcgcc ggcattccta ccgtgcaacg cctttccac 360
 caaaggaaaa atgccgtcgta accgcgcgtg cagatacgc atcggttctt cggtttgtc 420
 caaaaagctga ttgttggcat catacatctc ataatgcgc gaaaccacgg aatttttcac 480
 gatagccata tttgtcctt caggaacagc agattaatta caggcgcatt ctaa 534

<210> 908

<211> 177
<212> PRT
<213> Neisseria meningitidis

<400> 908

Arg	Gln	Ser	Val	Val	Val	Met	Thr	Val	Arg	Ala	Val	Asp	Met	Thr	Val
1			5					10					15		
Cys	Asp	Phe	Leu	Ile	Gly	Cys	Ile	Ala	His	Ala	Phe	Asn	Cys	Ser	Leu
			20				25						30		
Lys	Ala	Asp	Phe	His	Ala	Cys	Gln	Arg	Met	Val	Ala	Val	His	His	Arg
				35				40					45		
Leu	Ala	Val	Gly	Asn	Ile	Gly	Tyr	Thr	Ile	Asp	Asp	Asn	Ile	Ala	Gly
		50				55				60					
Phe	Arg	Ile	Val	Gly	Phe	Lys	His	His	Ala	Asp	Phe	Asp	Phe	Asn	Arg
		65				70				75			80		
Glu	His	Ala	Arg	Ile	Phe	Asp	Thr	Asp	Gln	Leu	Arg	Ile	Leu	Leu	Ala
			85					90					95		
Glu	Arg	Ile	Val	Gly	Arg	Gln	Arg	His	Ile	Asp	Arg	Ile	Ala	Gly	Ile
			100					105				110			
Leu	Thr	Val	Gln	Arg	Leu	Phe	His	Gln	Arg	Glu	Asn	Ala	Val	Val	Thr
			115				120				125				
Ala	Val	Gln	Ile	Arg	Asn	Arg	Phe	Phe	Gly	Phe	Val	Gln	Lys	Leu	Ile
			130				135				140				
Val	Gly	Ile	Ile	His	Leu	Ile	Met	Gln	Arg	Asn	His	Gly	Ile	Phe	His
			145				150				155			160	
Asp	Ser	His	Ile	Cys	Pro	Phe	Arg	Asn	Ser	Arg	Leu	Ile	Thr	Gly	Ala
				165				170					175		

Phe

<210> 909
<211> 804
<212> DNA
<213> Neisseria meningitidis

<400> 909

atgccaacac gtccaaactcg cgccgcaaag catccaaaccc cgccaaacctg gcttcagacg 60
gcataactgcc ctcgtccgcc atatcgccg ccgtccgtgc aaacgcatac accgcataa 120
ccggcttcctt caaccgtgcgc ggcaaaatca gcgaaccgac gggaaaattt tcataatgcc 180
caaccgacat accttctcca tccatcaaac aaaatgcccgt ctgaaatgga acaaaccctt 240
ttcagacggc atcagatacc tccaagctgc cggcaatcag tggtggtat gaccgtgcgg 300
accgtggaca tgaccgtgtc cgatttcctc atcggatgca tcgcgcacac tttcaaccgt 360
aggcttaaag cggattttca tgcctgcca aggatgggtg ccgtccacca ccgccttacc 420
gtcggcaaca tcggttcacac gatagacgac aacatcgccg gtttcaggat cgtcggcttc 480
aaacatcatg ccgacttcga cttcaacagg gaacacgccc gcatcttcaa tacggaccaa 540

ctccggatcc tgctcgccga acgcacatcgac gggcgaaaagc gccacatcgac ccgtatcgcc 600
ggcatccta ccgtgcaacg cctttccac caaaggaaa atgcccgtcg aaccggccgtg 660
cagatacgca atcggttctt cggtttgtc caaaagctga ttgttggcat catacatctc 720
ataatgcagg gaaaccacgg aattcttcac gatagccata tttgtcctt caggaacagc 780
agattaatta caggcgattt ctaa 804

<210> 910

<211> 267

<212> PRT

<213> Neisseria gonorrhoeae

<400> 910

Met Pro Thr Arg Pro Thr Arg Ala Ala Lys His Pro Thr Pro Pro Thr

1 5 10 15

Trp Leu Gln Thr Ala Tyr Cys Pro Arg Pro Pro Tyr Arg Pro Pro Ser
20 25 30

Val Gln Thr His Thr Pro His Glu Pro Ala Ser Ser Thr Cys Ala Ala
35 40 45

Lys Ser Ala Asn Arg Arg Glu Asn Phe His Asn Ala Gln Pro Thr Tyr
50 55 60

Leu Leu His Pro Ser Asn Lys Met Pro Ser Glu Met Glu Gln Thr Leu
65 70 75 80

Phe Arg Arg His Gln Ile Pro Pro Ser Cys Arg Gln Ser Val Val Val
85 90 95

Met Thr Val Arg Thr Val Asp Met Thr Val Cys Asp Phe Leu Ile Gly
100 105 110

Cys Ile Ala His Thr Phe Asn Arg Ser Leu Lys Ala Asp Phe His Ala
115 120 125

Cys Gln Arg Met Val Ala Val His His Arg Leu Thr Val Gly Asn Ile
130 135 140

Gly Tyr Thr Ile Asp Asp Asn Ile Ala Gly Phe Arg Ile Val Gly Phe
145 150 155 160

Lys His His Ala Asp Phe Asp Phe Asn Arg Glu His Ala Arg Ile Phe
165 170 175

Asn Thr Asp Gln Leu Arg Ile Leu Leu Ala Glu Arg Ile Val Gly Arg
180 185 190

Lys Arg His Ile Asp Arg Ile Ala Gly Ile Leu Thr Val Gln Arg Leu
195 200 205

Phe His Gln Arg Glu Asn Ala Val Val Thr Ala Val Gln Ile Arg Asn
210 215 220

Arg Phe Phe Gly Phe Val Gln Lys Leu Ile Val Gly Ile Ile His Leu
225 230 235 240

Ile Met Gln Arg Asn His Gly Ile Leu His Asp Ser His Ile Cys Pro
245 250 255

Phe Arg Asn Ser Arg Leu Ile Thr Gly Ala Phe
260 265

<210> 911

<211> 660

<212> DNA

<213> Neisseria gonorrhoeae

<400> 911

atgatagaag tcatacattt ctccggcacc gaaacgcgca gacagttgc ttgtgccgac 60
gttggacgat ttctgcgtga tgccgcgcac atccaaagag ggtaaacat gggtatcg 120
cacgggagac ggtccgatt tataaggctg cgtattcagc cgttcggtca aatcggttt 180
gcccgcatcc aatgccttcg caatcacaaa cggttgatt gccgaacccg gttcgatcat 240
atcggttacg gcacgggtgc gcccgtgtc gctgtctgcc cggccgggatc tgttggatc 300
gttaggcgggc gtattggcca aggcgaggat ttccccgtg cgggcattca araccaccac 360
cgttccggct tttgcctgat ggtattcgac cgcctgttc aactcttcat aggccaagg 420
ctgaatcctc tgatcgaggg aaaggatgat gtcttgccg ttttcgggg cttaaktgcg 480
cggggagtcc aagctgtcca caatattgccc ctgcccgtcc cgcaaaaacga cttccgcgcc 540
gtcttcgcca tgcaagctgt cttcaagcga aagttccaaa ctttcctgac ctttgccgtc 600
aatatcgta aatccgatga cgtgtcggaa caggttgccc atcgggtaat ggcgtttaa 660

<210> 912

<211> 267

<212> PRT

<213> Neisseria gonorrhoeae

<400> 912

Met Pro Thr Arg Pro Thr Arg Ala Ala Asn Pro Pro Thr Pro Thr Thr
1 5 10 15

Trp Leu Gln Thr Ala Tyr Cys Pro Arg Pro Pro Tyr Arg Pro Pro Ser
20 25 30

Val Gln Thr His Thr Pro His Glu Pro Ala Ser Ser Thr Cys Ala Ala
35 40 45

Lys Ser Ala Asn Arg Arg Glu Asn Ser His Asn Ala Gln Pro Thr Tyr
50 55 60

Leu Leu His Pro Ser Asn Lys Met Pro Ser Glu Thr Glu Gln Thr Leu
65 70 75 80

Phe Arg Arg His Gln Ile Pro Pro Ser Cys Arg Gln Ser Val Val Val
85 90 95

Met Thr Val Arg Thr Val Asp Met Thr Val Cys Asp Phe Leu Ile Gly
100 105 110

Cys Ile Ala His Ala Phe Asn Arg Ser Phe Lys Ala Asp Phe His Ala
115 120 125

Cys Gln Arg Met Val Ala Val His His Arg Leu Ala Val Gly Asn Ile
 130 135 140
 Gly Tyr Thr Ile Asp Asp Asn Ile Ala Gly Phe Arg Ile Val Arg Phe
 145 150 155 160
 Lys His His Thr Asp Leu Asp Phe Asn Arg Glu Arg Ala Arg Ile Phe
 165 170 175
 Asn Thr Asp Gln Leu Arg Ile Met Leu Thr Glu Arg Ile Val Gly Arg
 180 185 190
 Lys Arg His Phe Asp Arg Ile Ala Gly Ile Leu Thr Val Gln Arg Leu
 195 200 205
 Phe His Gln Arg Glu Asn Ala Val Val Thr Ala Val Gln Ile Arg Asn
 210 215 220
 Arg Phe Phe Gly Phe Ile Gln Lys Leu Ile Val Gly Ile Ile His Leu
 225 230 235 240
 Ile Met Gln Arg Asn His Gly Ile Phe Cys Asn Ser His Ile Cys Pro
 245 250 255
 Phe Arg Asn Ser Arg Leu Ile Thr Gly Ala Phe
 260 265

<210> 913
 <211> 804
 <212> DNA
 <213> Neisseria meningitidis

<400> 913
 atgccaacac gtccaaactcg cgctgcaaac cctccaaaccc cgccaaacctg gcttcagacg 60
 gcataactgcc ctcgtccgc atatcgtccg ccgtccgtgc aaacgcgtac accgcgtgaa 120
 cccgcttcct caacctgcgc ggcaaaatca gcgaaccgac gggaaaattc tcataatgcc 180
 caaccgacat accttctcca tccatcaaac aaaatgccgt ctgaaacgga acaaaccctt 240
 ttccagacggc atcagatacc tccaaagctgc cggcaatcag tggtggtgat gaccgtgcgg 300
 gccgtggaca tgaccgtgtg cgatttcctc atcggatgca tcgcgcacgc tttcaactgt 360
 agccttaaag cggattttca tgcctgcca aggatggttg ccgtccacca ccgccttgcc 420
 gtcggcaaca tcggttcac acatagacgac aacatcgccg gtttcaggat cgtccggcttc 480
 aacacatcatg ccgacttcga cttcaacagg gaacacgccc gcatcttcga tacgaccaa 540
 ctccggatcc tgctcgccga acgcacatcgac gggcgacagc gccacatcgac ccgtatgcc 600
 ggcatttccta ccgtgcaacg ccttccac caaaggggaaa atgcccgtat aaccgcccgtg 660
 cagatacgcac atcggttctt cgggtttgtc caaaagctga ttgttggcat catacatctc 720
 ataatgcacgac gaaaccacgg aattttcac gatagccata tttgtcctt caggaacacgc 780
 agattaatttta caggcgccatt ctaa 804

<210> 914
 <211> 267
 <212> PRT
 <213> Neisseria meningitidis

<400> 914
 Met Pro Thr Arg Pro Thr Arg Ala Ala Asn Pro Pro Pro Thr

1	5	10	15
Trp Leu Gln Thr Ala Tyr Cys Pro Arg	Pro Pro Tyr Arg Pro Pro Ser		
20	25	30	
Val Gln Thr Arg Thr Pro Arg Glu Pro Ala Ser Ser Thr Cys Ala Ala			
35	40	45	
Lys Ser Ala Asn Arg Arg Glu Asn Ser His Asn Ala Gln Pro Thr Tyr			
50	55	60	
Leu Leu His Pro Ser Asn Lys Met Pro Ser Glu Thr Glu Gln Thr Leu			
65	70	75	80
Phe Arg Arg His Gln Ile Pro Pro Ser Cys Arg Gln Ser Val Val Val			
85	90	95	
Met Thr Val Arg Ala Val Asp Met Thr Val Cys Asp Phe Leu Ile Gly			
100	105	110	
Cys Ile Ala His Ala Phe Asn Cys Ser Leu Lys Ala Asp Phe His Ala			
115	120	125	
Cys Gln Arg Met Val Ala Val His His Arg Leu Ala Val Gly Asn Ile			
130	135	140	
Gly Tyr Thr Ile Asp Asp Asn Ile Ala Gly Phe Arg Ile Val Gly Phe			
145	150	155	160
Lys His His Ala Asp Phe Asp Phe Asn Arg Glu His Ala Arg Ile Phe			
165	170	175	
Asp Thr Asp Gln Leu Arg Ile Leu Leu Ala Glu Arg Ile Val Gly Arg			
180	185	190	
Gln Arg His Ile Asp Arg Ile Ala Gly Ile Leu Thr Val Gln Arg Leu			
195	200	205	
Phe His Gln Arg Glu Asn Ala Val Val Thr Ala Val Gln Ile Arg Asn			
210	215	220	
Arg Phe Phe Gly Phe Val Gln Lys Leu Ile Val Gly Ile Ile His Leu			
225	230	235	240
Ile Met Gln Arg Asn His Gly Ile Phe His Asp Ser His Ile Cys Pro			
245	250	255	
Phe Arg Asn Ser Arg Leu Ile Thr Gly Ala Phe			
260	265		

<210> 915
<211> 804
<212> DNA
<213> *Neisseria meningitidis*

<400> 915

atgccaacac gtccaaactcg cgccgcaaag catccaaacc cgcacacctg gcttcagacg 60
gcatactgcc ctcgtccgccc atatcgatcc cggtccgtgc aaacgcatac accgcattgaa 120
ccggcttctt caacccgtgcg ggcaaaatca gcgaaccgac gggaaaattt tcataatgcc 180
caaccgacat accttctcca tccatcaaac aaaatgcgt ctgaaatgga acaaaccctt 240
ttcagacggc atcagatacc tccaaagctgc cggcaatcag tgggtggat gaccgtgcgg 300
accgtggaca tgaccgtgtc cgatttcctc atcggatgca tgcgcacac tttcaaccgt 360
agccttaaag cggatttca tgcctgccaa aggtatgggtt ccgtccacca ccgccttacc 420
gtcggcaaca tcggttacac gatagacgac aacatcgccg gtttcaggat cgtcgcttc 480
aaacatcatg ccgacttcga cttcaacagg gaacacgccc gcatcttcaa tacggaccaa 540
ctccggatcc tgctcgccga acgcatcgac gggcgaaagc gccacatgca ccgtatgcc 600
ggcattccta ccgtgcaacg ccttccac caaaggaaa atgcccgt aaccggctg 660
cagatacgcg atcgttctt cgggttgc caaaagctga ttgttggcat catacatctc 720
ataatgcacg gaaaccacgg aattcttcac gatagccata tttgtcctt caggaacacg 780
agattaatta caggcgcatt ctaa 804

<210> 916

<211> 267

<212> PRT

<213> Neisseria meningitidis

<400> 916

Met	Pro	Thr	Arg	Pro	Thr	Arg	Ala	Ala	Lys	His	Pro	Thr	Pro	Pro	Thr
1				5					10				15		

Trp	Leu	Gln	Thr	Ala	Tyr	Cys	Pro	Arg	Pro	Pro	Tyr	Arg	Pro	Pro	Ser
							20		25			30			

Val	Gln	Thr	His	Thr	Pro	His	Glu	Pro	Ala	Ser	Ser	Thr	Cys	Ala	Ala
							35		40			45			

Lys	Ser	Ala	Asn	Arg	Arg	Glu	Asn	Phe	His	Asn	Ala	Gln	Pro	Thr	Tyr
							50		55			60			

Leu	Leu	His	Pro	Ser	Asn	Lys	Met	Pro	Ser	Glu	Met	Glu	Gln	Thr	Leu
							65		70			75		80	

Phe	Arg	Arg	His	Gln	Ile	Pro	Pro	Ser	Cys	Arg	Gln	Ser	Val	Val	Val
															85
															90
															95

Met	Thr	Val	Arg	Thr	Val	Asp	Met	Thr	Val	Cys	Asp	Phe	Leu	Ile	Gly
							100		105			110			

Cys	Ile	Ala	His	Thr	Phe	Asn	Arg	Ser	Leu	Lys	Ala	Asp	Phe	His	Ala
															115
															120
															125

Cys	Gln	Arg	Met	Val	Ala	Val	His	His	Arg	Leu	Thr	Val	Gly	Asn	Ile
							130		135			140			

Gly	Tyr	Thr	Ile	Asp	Asp	Asn	Ile	Ala	Gly	Phe	Arg	Ile	Val	Gly	Phe
							145		150			155			160

Lys	His	His	Ala	Asp	Phe	Asp	Phe	Asn	Arg	Glu	His	Ala	Arg	Ile	Phe
															165
															170
															175

Asn Thr Asp Gln Leu Arg Ile Leu Leu Ala Glu Arg Ile Val Gly Arg

180	185	190
Lys Arg His Ile Asp Arg Ile Ala Gly Ile Leu Thr Val Gln Arg Leu		
195	200	205
Phe His Gln Arg Glu Asn Ala Val Val Thr Ala Val Gln Ile Arg Asn		
210	215	220
Arg Phe Phe Gly Phe Val Gln Lys Leu Ile Val Gly Ile Ile His Leu		
225	230	235
Ile Met Gln Arg Asn His Gly Ile Leu His Asp Ser His Ile Cys Pro		
245	250	255
Phe Arg Asn Ser Arg Leu Ile Thr Gly Ala Phe		
260	265	

<210> 917
<211> 870
<212> DNA
<213> Neisseria gonorrhoeae

<400> 917
atgatcggcg aacttgggt tttgttcgtg atcgagcaact tcaagcaacg cgctggcg 60
atcgcccccga aagtgcgtgc ccaatttgc gatttgcgtg agcaggaaca acgggtttct 120
tacgcctgtc tttgcataat tctgcataat ctgcggggc atagagccga tataggtacg 180
gcgggtccccg cggatttgc tttgcgtgcg cacgcggccc aaggccatac ggacatattt 240
ccggcccccgtt gctttggcga tggattgcgc caaagagggtt tggcccacgc ccggaggggc 300
gaccacaaacac agaatcggac ctttgagctt gtccatacgt tttggacgg cgaggattt 360
caaaatccgt tctttgactt tttccaggcc gtagtggtcg gcatccagca ccagtccggc 420
tttggcgatg tctttgctga cgcgggattt tttctccac ggcagtccga gcagggtgtc 480
gatgttagttt cgtacacgg tggattcggc agacatcggc ggcacatcatt tgagttttt 540
cagttcggac aggatttt cttccgcattt tttggcata cccgccttt tgatgcctgc 600
ctcccaaggca tccaggcgtc cggtttcgtc ttcttcgc aattctttgt gtatcgctt 660
aatctgttcg ttcagataat attcgcgttggattttcc atttggcgtt tgacgcgtcc 720
gcgtatgcgt ttttcggcct gcataatgtc gagttcggat tccagcttt ccagcaggaa 780
ttccatccgt ttgccgattt cgggaatctc caaaaatctgt tggcggttcg ccagttcaa 840
ctgcaaatgc gtcgcgaccg tatcggttag 870

<210> 918
<211> 289
<212> PRT
<213> Neisseria gonorrhoeae

<400> 918
Met Ile Gly Glu Leu Val Val Leu Phe Val Ile Glu His Phe Lys Gln
1 5 10 15

Arg Ala Gly Gly Ile Ala Pro Lys Val Ala Ala Gln Phe Val Asp Phe
20 25 30

Val Glu Gln Glu Gln Arg Val Ser Tyr Ala Cys Phe Cys His Ile Leu
35 40 45

Gln Asn Leu Ala Gly His Arg Ala Asp Ile Gly Thr Ala Val Pro Ala

	50	55	60
Asp Phe Ala Phe Val Ala His Ala Ala Gln Gly His Thr Asp Ile Phe			
65	70	75	80
Pro Pro Arg Cys Phe Gly Asp Gly Phe Ala Gln Arg Gly Phe Ala His			
85	90	95	
Ala Arg Arg Ala Asp Gln Thr Gln Asn Arg Thr Phe Glu Leu Val His			
100	105	110	
Thr Phe Leu Asp Gly Glu Val Phe Gln Asn Pro Phe Phe Asp Phe Phe			
115	120	125	
Gln Ala Val Val Val Gly Ile Gln His Gln Ser Gly Phe Gly Asp Val			
130	135	140	
Phe Ala Asp Ala Gly Phe Phe Leu Pro Arg Gln Ser Glu Gln Gly Val			
145	150	155	160
Asp Val Val Ala Tyr Asp Gly Gly Phe Gly Arg His Arg Arg His His			
165	170	175	
Phe Glu Phe Phe Gln Phe Gly Gln Ala Phe Phe Phe Arg Phe Phe Gly			
180	185	190	
His Thr Arg Leu Phe Asp Ala Cys Leu Gln Gly Ile Gln Phe Ala Val			
195	200	205	
Phe Val Phe Phe Ala Gln Phe Phe Val Tyr Arg Phe Asn Leu Phe Val			
210	215	220	
Gln Ile Ile Phe Ala Leu Gly Phe Phe His Leu Ala Phe Asp Ala Ser			
225	230	235	240
Ala Tyr Ala Phe Phe Gly Leu His Asn Val Glu Phe Gly Phe Gln Leu			
245	250	255	
Cys Gln Gln Glu Phe His Pro Phe Ala Asp Phe Gly Asn Leu Gln Asn			
260	265	270	
Leu Leu Ala Leu Arg Gln Phe Gln Leu Gln Met Arg Cys Asp Arg Ile			
275	280	285	
Gly			

<210> 919
<211> 870
<212> DNA
<213> Neisseria meningitidis

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<400> 919  
atgatcgga aacttgttgc tttgttcggg atcgagcact tcgagcaacg cgctggcggg 60  
atcgccctcg aagtgcgtac ccaattgtc gatttcgtcg agcaggaaca aggggttttt 120  
cacqccggct tttgccatat tctgcaaaat cttaccgggc atagagccga tataagggtcg 180
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gcgggtgtccc ctgatttcgc tttcgctcgcc cacgcccggcc aaagccatgc ggacatattt 240
ccgccccgtt gctttggcga tggattcgcc caaagagggtt tgcccacgc ccggaggggcc 300
gaccaggcac agaatcgggc ctttgagttt gtccatacgt ttttggacgg cgaggtattc 360
caaaaatccgt tctttgactt tttccaggcc gtagtggtcg gcatccagca ccagtccggc 420
tttggcgatg tctttgctga cgccggattt tttctccac ggcagctcga gcaaagtgtc 480
gatgtagttg cgtacgacgg tgattccgc agacatcggt ggcatttcatt tgagctttt 540
cagttcggac aggatttt ctcccgcttc ttggtcata cccgccttt tgatatctgc 600
ttccaaggca tccagttcgc cggttcgtc ttcttcgccc agtttttgtt gtatcgctt 660
aatctgttcg ttcagataat attcgcgtc ggattttcc atttggcgtt tgacgcgtcc 720
gcgtatgcgt tttcggcct gcataatgtc gagttcggat tccagctgt ccagcaggaa 780
ttccatccgt ttgccgattt cggaaatttcaaaaatctgt tggcggttgcg ccagttcaa 840
ctgcaaatgc gctgcgaccg tatcggttag 870

<210> 920

<211> 289

<212> PRT

<213> Neisseria meningitidis

<400> 920

Met Ile Gly Lys Leu Val Val Leu Phe Gly Ile Glu His Phe Glu Gln
1 5 10 15

Arg Ala Gly Gly Ile Ala Ser Glu Val Val Thr Gln Phe Val Asp Phe
20 25 30

Val Glu Gln Glu Gln Gly Val Phe His Ala Gly Phe Cys His Ile Leu
35 40 45

Gln Asn Leu Thr Gly His Arg Ala Asp Ile Gly Ala Ala Val Ser Pro
50 55 60

Asp Phe Ala Phe Val Ala His Ala Ala Gln Ser His Ala Asp Ile Phe
65 70 75 80

Pro Pro Arg Cys Phe Gly Asp Gly Phe Ala Gln Arg Gly Phe Ala His
85 90 95

Ala Arg Arg Ala Asp Gln Ala Gln Asn Arg Ala Phe Glu Phe Val His
100 105 110

Thr Phe Leu Asp Gly Glu Val Phe Gln Asn Pro Phe Phe Asp Phe Phe
115 120 125

Gln Ala Val Val Val Gly Ile Gln His Gln Ser Gly Phe Gly Asp Val
130 135 140

Phe Ala Asp Ala Gly Phe Phe Leu Pro Arg Gln Leu Glu Gln Ser Val
145 150 155 160

Asp Val Val Ala Tyr Asp Gly Gly Phe Arg Arg His Arg Trp His His
165 170 175

Phe Glu Leu Phe Gln Phe Gly Gln Ala Phe Phe Phe Arg Phe Phe Gly
180 185 190

His Thr Arg Leu Phe Asp Ile Cys Phe Gln Gly Ile Gln Phe Ala Val

195

200

205

Phe Val Phe Phe Ala Gln Phe Phe Val Tyr Arg Phe Asn Leu Phe Val
210 215 220

Gln Ile Ile Phe Ala Leu Gly Phe Phe His Leu Ala Phe Asp Ala Ser
225 230 235 240

Ala Tyr Ala Phe Phe Gly Leu His Asn Val Glu Phe Gly Phe Gln Leu
245 250 255

Cys Gln Gln Glu Phe His Pro Phe Ala Asp Phe Gly Asn Phe Gln Asn
260 265 270

Leu Leu Ala Leu Arg Gln Phe Gln Leu Gln Met Arg Cys Asp Arg Ile
275 280 285

Gly

<210> 921

<211> 870

<212> DNA

<213> Neisseria meningitidis

<400> 921

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atccggccgg aagtgcgttc ccaattgttc gatttcgtcg agcaggaaca atgggttttt 120
tacggccgtt tttgcataat tctgcggat cttaccgggc atggagccga tatagggtcg 180
gcgggtgtccc cggatttcgc ttcgtcgcg cacggccggcc aaagccatgc ggacatattt 240
ccggccccgtt gctttggcga tggattcgcc caaagagggtt ttgcccacgc ctggaggggcc 300
gaccaggcac agaatcgggc ctttaggttt gtccataacgt ttttggacgg cgaggtattc 360
caaaatccgt tctttgactt tttccaggcc gtagtggtcg gtatccagca ccaatccggc 420
tttggcgatg tctttgctga cgcgggattt tttcttccac ggcagttcga gcaggggtgc 480
gatgttagttc cgtacgacgg tggattcggt agacatcggt ggcacatcattt tgagttttt 540
cagttcgac aggcattttt ctcccgcttc tttggtcata cccgcctttt tgatatctgc 600
ttccaaggca tccagttcgc cgttttcgtc ttcttcggcc agttctttgt gtatcgctt 660
aatctgttcg ttcagataat attcgcgtt ggattttcc atttggcgtt tgacgcgtcc 720
gcgtatgcgt tttcggcctt gcataatgtc gagttcggtt tccagctgtt ccagcaggaa 780
ttccatccgt ttgcccattt cggaaatttc caaaatctgt tggcggtgcg ccagttcaa 840
ctgcaaatgc gctgcgaccg tattcggttag 870

<210> 922

<211> 289

<212> PRT

<213> Neisseria meningitidis

<400> 922

Met Ile Gly Glu Leu Val Val Leu Leu Gly Ile Lys His Phe Glu Gln
1 5 10 15

Arg Ala Gly Gly Ile Ala Pro Glu Val Ala Xaa Gln Phe Val Asp Phe
20 25 30

Val Glu Gln Glu Gln Trp Val Phe Tyr Ala Gly Phe Cys His Ile Leu

35	40	45	
Gln Asn Leu Thr Gly His	Gly Ala Asp Ile	Gly Ala Ala Val Ser Pro	
50	55	60	
Asp Phe Ala Phe Val Ala His	Ala Ala Gln Ser His	Ala Asp Ile Phe	
65	70	75	80
Pro Pro Arg Cys Phe Gly Asp	Gly Phe Ala Gln Arg	Gly Phe Ala His	
85	90	95	
Ala Trp Arg Ala Asp Gln Ala Gln Asn Arg	Ala Phe Glu Phe Val His		
100	105	110	
Thr Phe Leu Asp Gly Glu Val	Phe Gln Asn Pro Phe	Phe Asp Phe Phe	
115	120	125	
Gln Ala Val Val Val Gly Ile	Gln His Gln Ser Gly	Phe Gly Asp Val	
130	135	140	
Phe Ala Asp Ala Gly Phe	Phe Leu Pro Arg Gln	Phe Glu Gln Gly Val	
145	150	155	160
Asp Val Val Ala Tyr Asp Gly Gly	Phe Gly Arg His Arg	Arg His His	
165	170	175	
Phe Glu Leu Phe Gln Phe Gly Gln Ala Phe	Phe Phe Arg Phe	Phe Gly	
180	185	190	
His Thr Arg Leu Phe Asp Ile Cys	Phe Gln Gly Ile	Gln Phe Ala Val	
195	200	205	
Phe Val Phe Phe Ala Gln Phe	Phe Val Tyr Arg Phe	Asn Leu Phe Val	
210	215	220	
Gln Ile Ile Phe Ala Leu Gly	Phe His Leu Ala Phe	Asp Ala Ser	
225	230	235	240
Ala Tyr Ala Phe Phe Gly Leu His	Asn Val Glu Phe Gly	Phe Gln Leu	
245	250	255	
Cys Gln Gln Glu Phe His Pro	Phe Ala Asp Phe Gly	Asn Phe Gln Asn	
260	265	270	
Leu Leu Ala Leu Arg Gln Phe	Gln Leu Gln Met Arg	Cys Asp Arg Ile	
275	280	285	
Gly			

<210> 923
 <211> 333
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 923

atggtaatcg tctgggtgcc cgagttacccg ccgatgccgg cgacgatggg catcagcg 60
gcgagtgcga cgatttttc gatactgcct tcaaacgcgc cgatgacgcg gctggcgagg 120
aaggcggtgc agaggttgc ggcgagccac atccagcggt ttttgcggaa atccaagacg 180
ggggcgaaca ggtcttcctc ttccctgcaaa cctgcatgt tcaacatatac cgcttcggat 240
tcttcgcgga tcacgtccac catctcgctg atggtaatcc tgccgatgag cttttgcgtt 300
tcatcaacga cgggcgcggg aaccaagtgc tag 333

<210> 924
<211> 110
<212> PRT
<213> Neisseria gonorrhoeae

<400> 924
Met Val Ile Val Trp Leu Pro Glu Leu Pro Pro Met Pro Ala Thr Met
1 5 10 15

Gly Ile Ser Ala Ala Ser Ala Thr Ile Phe Ser Ile Leu Pro Ser Asn
20 25 30

Ala Pro Met Thr Arg Leu Ala Arg Lys Ala Val Gln Arg Leu Thr Ala
35 40 45

Ser His Ile Gln Arg Phe Leu Thr Glu Ser Lys Thr Gly Ala Asn Arg
50 55 60

Ser Ser Ser Ser Cys Lys Pro Ala Met Phe Asn Ile Ser Ala Ser Asp
65 70 75 80

Ser Ser Arg Ile Thr Ser Thr Ile Ser Ser Met Val Ile Leu Pro Met
85 90 95

Ser Phe Leu Phe Ser Ser Thr Thr Gly Ala Val Thr Lys Ser
100 105 110

<210> 925
<211> 333
<212> DNA
<213> Neisseria meningitidis

<400> 925
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gygagtgcga cgatttttc gatgctgcct tcaaacgcgc cgataacacg gytggcgagg 120
aaggcggtgc agaggttgc ggcgagccac atccagyygtt ttttcaccga atcccacacg 180
ggggcgaaya ggtcttcctc ttccctgcaaa cccgcataat tcagcatatac cgcttcggat 240
tcttcgcgga tcacgtccac catctcgctg atggtaatcc tgccgatgag cttttgcgtt 300
tcatcgacga cgggcgcggg aaccaagtgc tag 333

<210> 926
<211> 110
<212> PRT
<213> Neisseria meningitidis

<400> 926
Met Val Ile Val Trp Leu Pro Glu Leu Pro Pro Met Pro Ala Thr Met

1	5	10	15
Gly Ile Ser Ala Xaa Ser Ala Thr Ile Phe Ser Met Leu Pro Ser Asn			
20	25	30	
Ala Pro Ile Thr Arg Leu Ala Arg Lys Ala Val Gln Arg Leu Thr Ala			
35	40	45	
Ser His Ile Gln Xaa Phe Phe Thr Glu Ser His Thr Gly Ala Asn Arg			
50	55	60	
Ser Ser Ser Cys Lys Pro Ala Ile Phe Ser Ile Ser Ala Ser Asp			
65	70	75	80
Ser Ser Arg Ile Thr Ser Thr Ile Ser Ser Met Val Ile Leu Pro Met			
85	90	95	
Ser Phe Leu Phe Ser Ser Thr Thr Gly Ala Val Thr Lys Ser			
100	105	110	

<210> 927
<211> 333
<212> DNA
<213> Neisseria meningitidis

<400> 927
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aaggcggtgc agaggttgac ggcgagccac atccagcggt ttttgacgga atccaagacg 180
ggggcgaata agtcttcctc ttcttgcaaa cccgccccat tcaacatatc cgcttcggat 240
tcttcgcgga tcacgtccac catttcgtca acggcacccc tgccgatgag cttttggtt 300
tcatcgacga cggcgcggt aaccaagtca tag 333

<210> 928
<211> 110
<212> PRT
<213> Neisseria meningitidis

<400> 928
Met Val Ile Val Trp Leu Pro Glu Leu Pro Pro Met Pro Ala Thr Met
1 5 10 15

Gly Ile Ser Ala Ala Ser Ala Thr Ile Phe Ser Met Leu Pro Ser Asn
20 25 30

Ala Pro Ile Thr Arg Leu Ala Arg Lys Ala Val Gln Arg Leu Thr Ala
35 40 45

Ser His Ile Gln Arg Phe Leu Thr Glu Ser Lys Thr Gly Ala Asn Lys
50 55 60

Ser Ser Ser Cys Lys Pro Ala Ile Phe Asn Ile Ser Ala Ser Asp
65 70 75 80

Ser Ser Arg Ile Thr Ser Thr Ile Ser Ser Thr Val Thr Leu Pro Met

85

90

95

Ser Phe Leu Phe Ser Ser Thr Thr Gly Ala Val Thr Lys Ser
100 105 110

<210> 929

<211> 834

<212> DNA

<213> Neisseria gonorrhoeae

<400> 929

atgccgcctg aagcccgccc ggcgggttca gacggcattt cgcgtttact tcgatcggtt 60
tatacgcaaa acgcgcgttca ggaataaat cagattttcc cccagacgccc ttccaggcttc 120
cttccgtgcc accgttaacca tagccggcg caacacacgg tcggacagg tataaccctt 180
cttcatcaca ccaaccacgg tattgggttc ctgctcaactg gccaccgcct gcacgcgcctg 240
atggatatttgc ggatcgagct tatcgccccgc tttaggatttgc atttcccttgc tttgcgtggc 300
atcaaacgccc ttctgcaact cattcaaagt catctgcaca cccatttca ggcacatcgaa 360
attaccgctc tgatccaaaa ggcgcatttc cagataatcc ttgaccggca acatttccac 420
ggcaaaacttc tgtccggcga acttgtgcgt atcggcaatt tcctgctgtt ggcggcggcg 480
cagggtttgc tcgtttgc aagcgccgcag ttgttgcgtt ttcaactgcg cttccagctc 540
ggcaatccgc gcctgcaaat cctcataagc cggctccggcg gcagcctgtt cctgtacacc 600
gtccgcattt cctactgtct cgacggtttc caccgcctcc acattttcaaa ccgccttcttc 660
actgtttgc tgctgtgtct gtgcgtcat atcgtatccc tcaaaaacaaa ttggaaatca 720
aaatccgggtt attaccggag caagataagg acattttcaaa gaaacttcaaa gcaaggcag 780
gaaatttcac atccgcgcgc gaatacccta ccgcacaaac catataaacg gtaa 834

<210> 930

<211> 277

<212> PRT

<213> Neisseria gonorrhoeae

<400> 930

Met Pro Pro Glu Ala Arg Pro Ala Gly Ser Asp Gly Ile Ala Ala Leu
1 5 10 15

Leu Arg Ser Val Tyr Thr Gln Asn Ala Leu Gln Glu Ile Asn Gln Ile
20 25 30

Ile Pro Gln Thr Pro Ser Gly Phe Leu Pro Cys His Arg Asn His Ser
35 40 45

Arg Ala Gln His Thr Val Gly Gln Gly Ile Thr Leu Leu His His Thr
50 55 60

Asn His Gly Ile Gly Phe Leu Leu Thr Gly His Arg Leu His Arg Leu
65 70 75 80

Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Ile Asp Phe Leu
85 90 95

Asp Leu Arg Gly Ile Lys Arg Leu Leu Gln Leu Ile Gln Ser His Leu
100 105 110

His Thr His Phe Gln Arg Ile Glu Ile Thr Ala Leu Ile Gln Lys Arg
115 120 125

His	Phe	Gln	Ile	Ile	Leu	Asp	Arg	Gln	His	Phe	His	Gly	Lys	Leu	Leu
130															
Ser	Gly	Glu	Leu	Val	Arg	Ile	Gly	Asn	Phe	Leu	Leu	Val	Ala	Ala	Ala
145															160
Gln	Val	Leu	Leu	Val	Cys	Gln	Ser	Ala	Gln	Leu	Phe	Val	Phe	Gln	Leu
165									170						175
Arg	Phe	Gln	Leu	Gly	Asn	Pro	Arg	Leu	Gln	Ile	Leu	Ile	Ser	Arg	Leu
180								185							190
Gly	Gly	Ser	Leu	Phe	Leu	Tyr	Thr	Val	Arg	Ile	Ser	Tyr	Cys	Leu	Asp
195								200							205
Gly	Phe	His	Arg	Leu	His	Ile	Phe	Asn	Arg	Phe	Phe	Thr	Val	Leu	Leu
210							215								220
Leu	Cys	Leu	Phe	Ala	His	Ile	Val	Ser	Leu	Lys	Thr	Asn	Trp	Lys	Ser
225							230								240
Lys	Ser	Gly	Tyr	Tyr	Pro	Ser	Lys	Ile	Arg	Thr	Phe	Ser	Arg	Asn	Phe
245								250							255
Lys	Gln	Arg	Gln	Glu	Ile	Ser	His	Pro	Pro	Pro	Asn	Thr	Leu	Pro	Gln
260							265								270
Lys	Pro	Tyr	Lys	Arg											
275															

<210> 931
 <211> 831
 <212> DNA
 <213> Neisseria meningitidis

<400> 931
 atgccgtctg aagccgaca ggccggttca gacggcatttgc cggctttact tcgatcggtt 60
 tatacgcaaa acgcgcatttca gaaaaataat cagatttttc cccagacgccc ttcaaggcttc 120
 ctctcgcc accgttaacca tagccggggcg caacacgcgg tcggacagcg tataaccctt 180
 ctctcatcaca cccaccacgg tattcggctc ctgttcgctt gccaccgcct gcatcgctt 240
 atggatatttgc ggatcgagct tatcgccccgc tttagggtttgc atttccttgc tttgcgttagc 300
 atcaaatgtt ttctgtcaact cgttcaaaatgtt catctgcacgc cccattttca gcgcacatcgaa 360
 attgccgctc tgatccaaaaa ggcgcatttca cagataatcc ttgaccggca gcatttccac 420
 gccaacttgc tgcggcgcga acttgtgcgt atccgcaattt tyctgtcttgc ggcggcggcg 480
 cagggttttgc tcgttttgc aagcgcgcgtt ctcgttttgc aactgcgttt ccagctcgcc 540
 aatccgcgcgc tgcaaatccct cataagccgg ctctgcggca gcctgttccct gcacaccgtt 600
 cgcattttccct actgtttcga cgggtttccac cgcctccaca ttttcaaccgc ttttttccct 660
 gttttgttgc tgcgttgcgtt cgcgtatatac gtatccctta aaacaaattt gaaatccaaaa 720
 tccagtttattt accccgcgcgaa gataaggaca ttttcaagaa acttcaakca aaakcagaga 780
 atttcaaattt cattttcaaaa tccccttaccg aaaaaataat atagacggta a 831

<210> 932
 <211> 276
 <212> PRT

<213> Neisseria meningitidis

<400> 932

Met	Pro	Ser	Glu	Ala	Arg	Gln	Ala	Gly	Ser	Asp	Gly	Ile	Ala	Ala	Leu
1			5					10					15		

Ile Pro Gln Thr Pro Ser Gly Phe Leu Leu Arg His Arg Asn His Ser
 35 40 45

Arg Ala Gln His Ala Val Gly Gln Arg Ile Thr Leu Leu His His Thr
 50 55 60

His His Gly Ile Arg Leu Leu Phe Ala Cys His Arg Leu His Arg Leu
65 70 75 80

Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Val Asp Phe Leu
85 90 95

Asp Leu Arg Ser Ile Lys Cys Phe Leu Gln Leu Val Gln Ser His Leu
100 . 105 110

His Ala His Phe Gln Arg Ile Glu Ile Ala Ala Leu Ile Gln Lys Arg
115 120 125

His Phe Gln Ile Ile Leu Asp Arg Gln His Phe His Gly Lys Leu Leu
130 135 140

Ser Gly Glu Leu Val Arg Ile Arg Asn Phe Leu Leu Val Ala Ala Ala
 145 150 155 160

Gln Val Leu Leu Val Cys Gln Ser Ala Leu Leu Val Phe Gln Leu Arg
165 170 175

Phe Gln Leu Gly Asn Pro Arg Leu Gln Ile Leu Ile Ser Arg Leu Cys
 180 185 190

Gly Ser Leu Phe Leu His Thr Val Arg Ile Ser Tyr Cys Phe Asp Gly
195 200 205

Phe His Arg Leu His Ile Phe Asn Arg Phe Phe Thr Val Leu Leu Leu
210 215 220

Cys	Leu	Phe	Ala	His	Ile	Val	Ser	Leu	Lys	Thr	Asn	Trp	Lys	Ser	Lys
225					230					235					240

Ser Ser Tyr Tyr Pro Arg Lys Ile Arg Thr Phe Ser Arg Asn Phe Xaa
245 250 255

Gln Xaa Gln Arg Ile Ser Asn Ser Phe Ser Asn Pro Leu Pro Lys Lys
 260 265 270

Xaa Tyr Arg Arg
275

<210> 933
<211> 834
<212> DNA
<213> Neisseria meningitidis

<400> 933
atgccgtctg aagcccgaca ggcgggttca gacggcattg ccgctttact tcgatcggtt 60
tatacgcaaa acgcgcattca ggaataaat cagattattc cccagacgcc ttcaggcttc 120
cttctgtgcc accgtAACCA tagCCGGCG caacacgcgg tcggacagcg tataaccctt 180
cttcatcacg cccaccacgg tattgggttc ctgttcgctt gccaccgcct gcacgcctg 240
atggatattc ggatcgagct tatcgcccgc tttaggattt atttccttga ttgcgttagc 300
atcaaattgtt ttctgcaact cggttcaaaagt catctgcacg cccatTTCA ggcgcacatcgaa 360
attgccgcctc tgatccaaaa ggcgcatttc cagataatcc ttgaccggca gcatttccac 420
ggcaaaacttc tgtccggcgaa acttgtgcgt atccgcaatt tcctgctgtt ggcggcggcg 480
cagggtttgc tcggttgcca aagcgcgcag ctgctcgct ttcaactgcg cttccagctc 540
ggcaatccgc gcctgcaaat cctcataagg cggctctgcg gcagcctgtt cctgcacacc 600
gtccgcattt cctactgtct cgacggtttc caccgcctcc acatTTCAA ccgcTTCTTC 660
actgtttgc tgctgtgtct gttcgctcat atcgtatccc taaaacaaa ttggaaatca 720
aaatccagtt attacccgcg caagataagg acatTTCAA gaaacttcaa gcaaaggcag 780
agaatttcaa attcattttc aaatccccta ccgaaaaat aatatacgatgtaa 834

<210> 934
<211> 276
<212> PRT
<213> Neisseria meningitidis

<400> 934
Met Pro Ser Glu Ala Arg Gln Ala Gly Ser Asp Gly Ile Ala Ala Leu
1 5 10 15

Leu Arg Ser Val Tyr Thr Gln Asn Ala Leu Gln Glu Ile Asn Gln Ile
20 25 30

Ile Pro Gln Thr Pro Ser Gly Phe Leu Leu Cys His Arg Asn His Ser
35 40 45

Arg Ala Gln His Ala Val Gly Gln Arg Ile Thr Leu Leu His His Ala
50 55 60

His His Gly Ile Gly Phe Leu Phe Ala Cys His Arg Leu His Arg Leu
65 70 75 80

Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Ile Asp Phe Leu
85 90 95

Asp Leu Arg Ser Ile Lys Cys Phe Leu Gln Leu Val Gln Ser His Leu
100 105 110

His Ala His Phe Gln Arg Ile Glu Ile Ala Ala Leu Ile Gln Lys Arg
115 120 125

His Phe Gln Ile Ile Leu Asp Arg Gln His Phe His Gly Lys Leu Leu
130 135 140

Ser Gly Glu Leu Val Arg Ile Arg Asn Phe Leu Leu Val Ala Ala Ala

145	150	155	160
Gln Val Leu Leu Val Cys Gln Ser Ala Gln Leu Leu Val Phe Gln Leu			
165	170	175	
Arg Phe Gln Leu Gly Asn Pro Arg Leu Gln Ile Leu Ile Ser Arg Leu			
180	185	190	
Cys Gly Ser Leu Phe Leu His Thr Val Arg Ile Ser Tyr Cys Leu Asp			
195	200	205	
Gly Phe His Arg Leu His Ile Phe Asn Arg Phe Phe Thr Val Leu Leu			
210	215	220	
Leu Cys Leu Phe Ala His Ile Val Ser Leu Lys Thr Asn Trp Lys Ser			
225	230	235	240
Lys Ser Ser Tyr Tyr Pro Arg Lys Ile Arg Thr Phe Ser Arg Asn Phe			
245	250	255	
Lys Gln Arg Gln Arg Ile Ser Asn Ser Phe Ser Asn Pro Leu Pro Lys			
260	265	270	
Lys Tyr Arg Arg			
275			

<210> 935

<211> 834

<212> DNA

<213> Neisseria gonorrhoeae

<400> 935

atgccgcctg aagcccgccc ggcgggttca gacggcattt cgcgtttact tcgatcggtt 60
tatacgcaaa acgcgcttca ggaaataaat cagattattc cccagacgcc ttcaggcttc 120

cttccgtgcc accgttaacca tagccggcgca aacacacgg tcggacagggtataaccctt 180
cttcatcaca ccaaccacgg tattgggttc ctgctcactg gccaccgcct gcacgcctg 240
atggatattc ggatcgagct tatcgccccgc tttaggattt atttccttga tttgcgtggc 300
atcaaacgccc ttctgcaact cattcaaagt catctgcaca cccatttca gcgcatcgaa 360
attaccgctc tgatccaaaa ggcgcatttc cagataatcc ttgaccggca acatttccac 420
ggcaaacttc tgtccggcga acttgtgcgt atcggcaatt tcctgctgggt ggcggcggcg 480
caggtttgc tcgtttgc aagcgccgca agtgcgttct ttcaactgcg cttccagctc 540
ggcaatccgc gcctgaaat cctcataagc cggctggcg gcagcctgtt cctgtacacc 600
gtccgcatt cctactgtct cgacggtttc caccgcctcc acatttcaa ccgcatttttc 660
actgtttgc tgctgtgtct gttcgctcat atcgtatccc tcaaaacaaa ttggaaatca 720
aaatccgggtt attacccgag caagataagg acatttcaa gaaacttcaa gcaaaggcag 780
gaaatttcac atccggccgc gaataacccta ccgcacaaac catataaaacg gtaa 834

<210> 936

<211> 277

<212> PRT

<213> Neisseria gonorrhoeae

<400> 936

Met Pro Pro Glu Ala Arg Pro Ala Gly Ser Asp Gly Ile Ala Ala Leu

1	5	10	15
Leu Arg Ser Val Tyr Thr Gln Asn Ala Leu Gln Glu Ile Asn Gln Ile			
20	25	30	
Ile Pro Gln Thr Pro Ser Gly Phe Leu Pro Cys His Arg Asn His Ser			
35	40	45	
Arg Ala Gln His Thr Val Gly Gln Gly Ile Thr Leu Leu His His Thr			
50	55	60	
Asn His Gly Ile Gly Phe Leu Leu Thr Gly His Arg Leu His Arg Leu			
65	70	75	80
Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Ile Asp Phe Leu			
85	90	95	
Asp Leu Arg Gly Ile Lys Arg Leu Leu Gln Leu Ile Gln Ser His Leu			
100	105	110	
His Thr His Phe Gln Arg Ile Glu Ile Thr Ala Leu Ile Gln Lys Arg			
115	120	125	
His Phe Gln Ile Ile Leu Asp Arg Gln His Phe His Gly Lys Leu Leu			
130	135	140	
Ser Gly Glu Leu Val Arg Ile Gly Asn Phe Leu Leu Val Ala Ala Ala			
145	150	155	160
Gln Val Leu Leu Val Cys Gln Ser Ala Gln Leu Phe Val Phe Gln Leu			
165	170	175	
Arg Phe Gln Leu Gly Asn Pro Arg Leu Gln Ile Leu Ile Ser Arg Leu			
180	185	190	
Gly Gly Ser Leu Phe Leu Tyr Thr Val Arg Ile Ser Tyr Cys Leu Asp			
195	200	205	
Gly Phe His Arg Leu His Ile Phe Asn Arg Phe Phe Thr Val Leu Leu			
210	215	220	
Leu Cys Leu Phe Ala His Ile Val Ser Leu Lys Thr Asn Trp Lys Ser			
225	230	235	240
Lys Ser Gly Tyr Tyr Pro Ser Lys Ile Arg Thr Phe Ser Arg Asn Phe			
245	250	255	
Lys Gln Arg Gln Glu Ile Ser His Pro Pro Pro Asn Thr Leu Pro Gln			
260	265	270	
Lys Pro Tyr Lys Arg			
275			

<210> 937

<211> 819

<212> DNA

<213> Neisseria meningitidis

<400> 937

atgccgtctg aagcccgaca ggcgggttca gacggcattg ccgcattact tcgatcggtt 60
tatacgcaaa acgcgttca gaaaataaat cagattattc cccagacgccc ttcaggcttc 120
cttctgcgcc accgtAACCA tagccggcg caaacacgcgg tcggacagcg tataaccctt 180
cttcatcaca cccaccacgg tattcggctc ctgttcgtt gccaccgcct gcacgcctg 240
atggatattc ggatcgagct tatcgcccc ttttagggttt atttccttga tttcgtagc 300
atcaaatgt ttctgcaact cggtcaaaagt catctgcacg cccatTTCA ggcacatcgaa 360
attgcccgtc tgatccaaa ggcgcatttc cagataatcc ttgaccggca gcatttccac 420
ggcaaaacttc tgtccggcga acttgtgcgt atccgcaatt tyctgcttgt ggcggcggcg 480
caggTTTGC tcgttgcca aagcgcgctg ctcgtcttc aactgcgtt ccagctcgcc 540
aatccgcgc tgcaaatcct cataagccgg ctctgcggca gcctgttct gcacaccgtc 600
cgcatTTCTC actgttgcga cggttccac cgcctccaca ttttcaaccg cttcttact 660
gttttgctgc tgtgtctgtt cgctcatatc gtatccctta aaacaattt gaaatcaaaa 720
tccagttatt acccgcgcaa gataaggaca ttttcaagaa acttcaakca aaakcagaga 780
atttcaaatt catttcaaa tccccttaccg aaaaaataaa 819

<210> 938

<211> 272

<212> PRT

<213> Neisseria meningitidis

<400> 938

Met Pro Ser Glu Ala Arg Gln Ala Gly Ser Asp Gly Ile Ala Ala Leu
1 5 10 15

Leu Arg Ser Val Tyr Thr Gln Asn Ala Leu Gln Glu Ile Asn Gln Ile
20 25 30

Ile Pro Gln Thr Pro Ser Gly Phe Leu Leu Arg His Arg Asn His Ser
35 40 45

Arg Ala Gln His Ala Val Gly Gln Arg Ile Thr Leu Leu His His Thr
50 55 60

His His Gly Ile Arg Leu Leu Phe Ala Cys His Arg Leu His Arg Leu
65 70 75 80

Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Val Asp Phe Leu
85 90 95

Asp Leu Arg Ser Ile Lys Cys Phe Leu Gln Leu Val Gln Ser His Leu
100 105 110

His Ala His Phe Gln Arg Ile Glu Ile Ala Ala Leu Ile Gln Lys Arg
115 120 125

His Phe Gln Ile Ile Leu Asp Arg Gln His Phe His Gly Lys Leu Leu
130 135 140

Ser Gly Glu Leu Val Arg Ile Arg Asn Phe Leu Leu Val Ala Ala Ala
145 150 155 160

Gln Val Leu Leu Val Cys Gln Ser Ala Leu Leu Val Phe Gln Leu Arg
165 170 175

Phe Gln Leu Gly Asn Pro Arg Leu Gln Ile Leu Ile Ser Arg Leu Cys
 180 185 190
 Gly Ser Leu Phe Leu His Thr Val Arg Ile Ser Tyr Cys Phe Asp Gly
 195 200 205
 Phe His Arg Leu His Ile Phe Asn Arg Phe Phe Thr Val Leu Leu Leu
 210 215 220
 Cys Leu Phe Ala His Ile Val Ser Leu Lys Thr Asn Trp Lys Ser Lys
 225 230 235 240
 Ser Ser Tyr Tyr Pro Arg Lys Ile Arg Thr Phe Ser Arg Asn Phe Xaa
 245 250 255
 Gln Xaa Gln Arg Ile Ser Asn Ser Phe Ser Asn Pro Leu Pro Lys Lys
 260 265 270

<210> 939
 <211> 822
 <212> DNA
 <213> Neisseria meningitidis

<400> 939
 atgccgtctg aagcccgaca ggcgggttca gacggcattg ccgcattact tcgatcggtt 60
 tataacgcaaa acgcgcattca gaaaataaat cagattattc cccagacgcc ttcaaggcttc 120
 ctctctgtgcc accgttaacca tagccggcg caacacgcgg tcggacagcg tataaccctt 180
 cttcatcacg cccaccacgg tattgggttc ctgttcgtt gccaccgcct gcacgcctg 240
 atggatattc ggatcgagct tatcgcccgc tttaggattt atttccttga tttgcgttagc 300
 atcaaatgtct ttctgcaact cgttcaaagt catctgcacg cccatttca gcgcacatcgaa 360
 attgcccgtc tgatccaaaa ggcgcatttc cagataatcc ttgaccggca gcatttccac 420
 ggccaaacttc tgtccggcga acttgtgcgt atccgcattt tcctgctgtt ggcggcggcg 480
 caggttttgc tcgtttgcgc aagcgcgcag ctgctcgct ttcaactgcg cttccagctc 540
 ggcacatccgc gcctgcaaat cctcataagg cggctctgcg gcagcctgtt cctgcacacc 600
 gtccgcattt cctactgtct cgacggtttc caccgcctcc acatttcaaa ccgcatttttc 660
 actgttttgc tgctgtgtct gttcgctcat atcgtatccc taaaaacaaa ttggaaatca 720
 aaatccagtt attacccgcg caagataagg acatttcaaa gaaacttcaa gcaaaggcag 780
 agaatttcaa attcattttc aaatccccta ccgaaaaat aa 822

<210> 940
 <211> 273
 <212> PRT
 <213> Neisseria meningitidis

<400> 940
 Met Pro Ser Glu Ala Arg Gln Ala Gly Ser Asp Gly Ile Ala Ala Leu
 1 5 10 15
 Leu Arg Ser Val Tyr Thr Gln Asn Ala Leu Gln Glu Ile Asn Gln Ile
 20 25 30

Ile Pro Gln Thr Pro Ser Gly Phe Leu Leu Cys His Arg Asn His Ser
 35 40 45

 Arg Ala Gln His Ala Val Gly Gln Arg Ile Thr Leu Leu His His Ala
 50 55 60

 His His Gly Ile Gly Phe Leu Phe Ala Cys His Arg Leu His Arg Leu
 65 70 75 80

 Met Asp Ile Arg Ile Glu Leu Ile Ala Arg Phe Arg Ile Asp Phe Leu
 85 90 95

 Asp Leu Arg Ser Ile Lys Cys Phe Leu Gln Leu Val Gln Ser His Leu
 100 105 110

 His Ala His Phe Gln Arg Ile Glu Ile Ala Ala Leu Ile Gln Lys Arg
 115 120 125

 His Phe Gln Ile Ile Leu Asp Arg Gln His Phe His Gly Lys Leu Leu
 130 135 140

 Ser Gly Glu Leu Val Arg Ile Arg Asn Phe Leu Leu Val Ala Ala Ala
 145 150 155 160

 Gln Val Leu Leu Val Cys Gln Ser Ala Gln Leu Leu Val Phe Gln Leu
 165 170 175

 Arg Phe Gln Leu Gly Asn Pro Arg Leu Gln Ile Leu Ile Ser Arg Leu
 180 185 190

 Cys Gly Ser Leu Phe Leu His Thr Val Arg Ile Ser Tyr Cys Leu Asp
 195 200 205

 Gly Phe His Arg Leu His Ile Phe Asn Arg Phe Phe Thr Val Leu Leu
 210 215 220

 Leu Cys Leu Phe Ala His Ile Val Ser Leu Lys Thr Asn Trp Lys Ser
 225 230 235 240

 Lys Ser Ser Tyr Tyr Pro Arg Lys Ile Arg Thr Phe Ser Arg Asn Phe
 245 250 255

 Lys Gln Arg Gln Arg Ile Ser Asn Ser Phe Ser Asn Pro Leu Pro Lys
 260 265 270

 Lys

<210> 941
 <211> 510
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 941
 atgtacgggc ggaacggtag tactcaagcg gccgttgct tcgtttcga ccagacacag 60
 cgtgcccgtt tcggcaacgg cgaagttac gccgctcaag ccgacatcgg cagtgctgta 120

aatatcgcmc agggcttgc gggcgaatcc ggtcagttgg tccacgtcgt ctgtaagcgg 180
tgtgccagg ttttgtgga acagttcgct gacctgttct ttggtttat ggattgcggg 240
catcacgata tgggtcggtt tttcgctgc catttggacg ataaactcgc ccaagtgcct 300
ttccaccgccc ttaatgcctt ttgcttcaag ataatggttc agctcgattt cttcgctgac 360
catggatttg ccttgacca tcagcttgcc gttttggct gtgatgatgt cgtggataat 420
ttggcaggct tcggcagggg ttccgcccc gtgtactttc acgccccact tagtcagggtt 480
ttcttccaac tgctccagca gcgcgggtaa 510

<210> 942

<211> 169

<212> PRT

<213> Neisseria gonorrhoeae

<400> 942

Met Tyr Gly Arg Asn Gly Ser Thr Gln Ala Ala Val Ala Phe Val Phe
1 5 10 15

Asp Gln Thr Gln Arg Ala Arg Phe Gly Asn Gly Glu Val Tyr Ala Ala
20 25 30

Gln Ala Asp Ile Gly Ser Ala Val Asn Ile Ala Gln Gly Phe Ala Gly
35 40 45

Glu Ser Gly Gln Leu Val His Val Val Cys Lys Arg Cys Ala Glu Val
50 55 60

Leu Val Glu Gln Phe Ala Asp Leu Phe Phe Gly Phe Met Asp Cys Gly
65 70 75 80

His His Asp Met Gly Arg Phe Phe Ala Cys His Leu Asp Asp Lys Leu
85 90 95

Ala Gln Val Ala Phe His Arg Leu Asn Ala Phe Cys Phe Lys Ile Met
100 105 110

Val Gln Leu Asp Phe Phe Ala Asp His Gly Phe Ala Phe Asp His Gln
115 120 125

Leu Ala Val Phe Gly Cys Asp Asp Val Val Asp Asn Leu Ala Gly Phe
130 135 140

Gly Arg Gly Phe Arg Pro Val Tyr Phe His Ala Gln Leu Ser Gln Val
145 150 155 160

Phe Phe Gln Leu Leu Gln Gln Arg Gly
165

<210> 943

<211> 449

<212> DNA

<213> Neisseria meningitidis

<400> 943

atgcacgggc ggtacgggtgg tactcaagcg accgttgctt cgtttccac cagacacagc 60
gtacctgttt cagcaacggc aaagttacg ccactcaaac cgacatcggc agtgctgtaa 120

atatcgcgca gtgcttacg ggcgaaggccg gtcagttggc ctacatcgctc tgcagcgcc 180
gtaccgaggt ttggggaa cagttcgcta acctgttctt tggtttggc gatagcaggc 240
atcacgataat gggtcggtt ttcgcctgcc atttggacga tgaactcgcc caagtgcgtt 300
tctaccgctt taatgcyyt tgcttcaaga taatgrttca gctcgatttc ctcgctgacc 360
atcgatttgc ctttgaccat cagcttgcgg ttttggctg tgatgatgtc gtggataatt 420
tggcaggcgtt cggcgcccg ttctgccc 449

<210> 944

<211> 150

<212> PRT

<213> Neisseria meningitidis

<400> 944

Met His Gly Arg Tyr Gly Gly Thr Gln Ala Thr Val Ala Phe Val Phe
1 5 10 15

His Gln Thr Gln Arg Thr Cys Phe Ser Asn Gly Lys Val Tyr Ala Thr
20 25 30

Gln Thr Asp Ile Gly Ser Ala Val Asn Ile Ala Gln Cys Phe Thr Gly
35 40 45

Glu Ala Gly Gln Leu Val Tyr Ile Val Cys Gln Arg Arg Thr Glu Val
50 55 60

Leu Val Glu Gln Phe Ala Asn Leu Phe Phe Gly Phe Val Asp Ser Arg
65 70 75 80

His His Asp Met Gly Arg Phe Phe Ala Cys His Leu Asp Asp Glu Leu
85 90 95

Ala Gln Val Ala Phe Tyr Arg Phe Asn Ala Phe Cys Phe Lys Ile Met
100 105 110

Xaa Gln Leu Asp Phe Leu Ala Asp His Arg Phe Ala Phe Asp His Gln
115 120 125

Leu Ala Val Phe Gly Cys Asp Asp Val Val Asp Asn Leu Ala Gly Phe
130 135 140

Gly Arg Gly Phe Cys Pro
145 150

<210> 945

<211> 501

<212> DNA

<213> Neisseria meningitidis

<400> 945

atgcacgggc ggaacgggt tactcaagcg accgttgcct tcgtttcca ccagacacag 60
cgtacctgtt tcagcaacgg cgaagttcac gccactcaa ccgacatcg cagtgcgtt 120
aatatcgcgca agtgcattac gggcgaagcc ggtcagttgg tctacgttgtt ccgttaacgg 180
tgtgcccagg ttttgggtt acagttcgct aacctgttct ttggtttat ggattgcggg 240
catcacgata tgggtcggtt tttcacctgc catttggacg atgaactcgcc ccaagtgcgtt 300
ttccaccgct ttaatgcctt ttgcttcaag ataatggttc agctcgattt ctcgctgac 360

catcgatttg cctttgacca tcagcttgc gttttggct gtgtatgtatc cgtggatgtat 420
ttcgcaggct tcggccggtg tttccgcccc aacgttacttt acgccccact tggtcaggtt 480
ttcttcacgc tgctccagca g 501

<210> 946
<211> 166
<212> PRT
<213> Neisseria meningitidis

<400> 946
Met His Gly Arg Asn Gly Gly Thr Gln Ala Thr Val Ala Phe Val Phe
1 5 10 15

His Gln Thr Gln Arg Thr Cys Phe Ser Asn Gly Glu Val His Ala Thr
20 25 30

Gln Thr Asp Ile Gly Ser Ala Val Asn Ile Ala Gln Cys Phe Thr Gly
35 40 45

Glu Ala Gly Gln Leu Val Tyr Val Val Arg Arg Cys Ala Glu Val Leu
50 55 60

Val Glu Gln Phe Ala Asn Leu Phe Phe Gly Phe Met Asp Cys Gly His
65 70 75 80

His Asp Met Gly Arg Phe Phe Thr Cys His Leu Asp Asp Glu Leu Ala
85 90 95

Gln Val Ala Phe His Arg Phe Asn Ala Phe Cys Phe Lys Ile Met Val
100 105 110

Gln Leu Asp Phe Leu Ala Asp His Arg Phe Ala Phe Asp His Gln Leu
115 120 125

Ala Val Phe Gly Cys Asp Asp Val Val Asp Asp Phe Ala Gly Phe Gly
130 135 140

Arg Cys Phe Arg Pro Val Tyr Phe Tyr Ala Gln Leu Gly Gln Val Phe
145 150 155 160

Phe Gln Leu Leu Gln Gln
165

<210> 947
<211> 981
<212> DNA
<213> Neisseria gonorrhoeae

<400> 947
atgaaacgta aaatgctaaa cgtaccaaag ggcggttatg atggatgtaa gggtttacc 60
attgttgaat ttctggttgc gggcctgctc agtataattt tcctgatagc ggtcgatcg 120
agttacttta catccggaa attaaatgtat gtggccaaacg aacgttcttgc cattcaacag 180
gatttgcggaa atgcggcaac attaattgtc cgcgatgcaa gaatggcggg gagcttcgg 240
tgtttcaata tgtccgagca tactaaagac gatattgttgc attcaagttaa tcaaactcaa 300
tctaacccttgc caaaaacccgg tgccaaacaa gaaaatcccc ttttttcctt aaaaaggagc 360

ggcatggata aacaactgat tcccgttgc gaatccatag atattaaata tccgggtttt 420
atccagcgc ttaacgcatt gttttccaa tacggatcg atgatcttg tgcgagtgc 480
gagactgtt tagtcagcag ctgttccaaa atagcaaaac cgggtaagaa aatatctacc 540
ttgcaagaag caaagagtgc attacagatt actaatgatg ataaacaaaa tggaaatatc 600
acccgtcaga aacatgttgt caatgcctat gcggcggca gtgttggcaa taatgaggaa 660
agtttgttcc gcttccaatt ggatgataag ggcaagtggg gtaatcctca gttgctcggt 720
aaaaaggtta aacgtatgga tgtgcgtat atttatgttt ccggttgtcc tgaagatgaa 780
gatgccggca aagagaaaa atttagat acgacataat tcgacaaatc caaaaatgct 840
gttacgcctg ccgggttggaa gtgttattt gatagcggcc ttaatgccaa gattgccgt 900
tcttcagaca atagtattt tgcttaccgt atcaatgcga caatacgcgg gggaaatgta 960
tgcgcaaaca gaacactttt a 981

<210> 948

<211> 326

<212> PRT

<213> Neisseria gonorrhoeae

<400> 948

Met Lys Arg Lys Met Leu Asn Val Pro Lys Gly Gly Tyr Asp Gly Met
1 5 10 15

Lys Gly Phe Thr Ile Val Glu Phe Leu Val Ala Gly Leu Leu Ser Ile
20 25 30

Ile Val Leu Ile Ala Val Val Ser Ser Tyr Phe Thr Ser Arg Lys Leu
35 40 45

Asn Asp Val Ala Asn Glu Arg Leu Ala Ile Gln Gln Asp Leu Arg Asn
50 55 60

Ala Ala Thr Leu Ile Val Arg Asp Ala Arg Met Ala Gly Ser Phe Gly
65 70 75 80

Cys Phe Asn Met Ser Glu His Thr Lys Asp Asp Ile Val Asp Ser Ser
85 90 95

Asn Gln Thr Gln Ser Asn Leu Ala Lys Pro Gly Ala Lys Gln Glu Asn
100 105 110

Pro Leu Phe Ser Leu Lys Arg Ser Gly Met Asp Lys Gln Leu Ile Pro
115 120 125

Val Ala Glu Ser Ile Asp Ile Lys Tyr Pro Gly Phe Ile Gln Arg Leu
130 135 140

Asn Ala Leu Val Phe Gln Tyr Gly Ile Asp Asp Leu Asp Ala Ser Ala
145 150 155 160

Glu Thr Val Val Ser Ser Cys Ser Lys Ile Ala Lys Pro Gly Lys
165 170 175

Lys Ile Ser Thr Leu Gln Glu Ala Lys Ser Ala Leu Gln Ile Thr Asn
180 185 190

Asp Asp Lys Gln Asn Gly Asn Ile Thr Arg Gln Lys His Val Val Asn

195	200	205
Ala Tyr Ala Val Gly Arg Phe Gly Asn Asn Glu Glu Ser Leu Phe Arg		
210	215	220
Phe Gln Leu Asp Asp Lys Gly Lys Trp Gly Asn Pro Gln Leu Leu Val		
225	230	240
Lys Lys Val Lys Arg Met Asp Val Arg Tyr Ile Tyr Val Ser Gly Cys		
245	250	255
Pro Glu Asp Glu Asp Ala Gly Lys Glu Glu Lys Phe Arg Tyr Thr Asn		
260	265	270
Lys Phe Asp Lys Ser Lys Asn Ala Val Thr Pro Ala Gly Val Glu Val		
275	280	285
Leu Leu Asp Ser Gly Leu Asn Ala Lys Ile Ala Ala Ser Ser Asp Asn		
290	295	300
Ser Ile Tyr Ala Tyr Arg Ile Asn Ala Thr Ile Arg Gly Gly Asn Val		
305	310	320
Cys Ala Asn Arg Thr Leu		
325		

<210> 949
 <211> 676
 <212> DNA
 <213> Neisseria meningitidis

<400> 949
 atsagacgt aaatgctaaa cgtwsyaraa ggcagttatg atggtatgaa aggttttacc 60
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 agttacttca catcccgaa attaaatgtatgcgcaaaacg agcgttttcgc cgccaaacag 180
 gatttgcgaa atgcggcaac attgatttgcgcgatgcga gaatggcagg cggcttcggt 240
 tgtttcaata tgtccgagca tcctgcaact gatgttatttcccgatacgc gcaacaaaat 300
 ttcctttttt cctaaaaaag gaacggtata gataaaactta ttcccatacg ggaatcttca 360
 aatatcaatt atcagaattt tttccaggtt ggttagcgcatttgattttca atacggaaatc 420
 gatgtatgttta atgcaagcac cgcgactacc gtcgtcagca gctgtgccgc aatatcgaaa 480
 ccggggcaagc aaatccctac tttagaaatgcgaaaaaaag aattgaagat tccggatcag 540
 gataaggagc aaaatggcaa tatagcgcgt caaaggcatg tggtaatgc ctatgcggc 600
 ggcaggatttgcgatgagga aagtttgcgttccat tggatgataa gggcaagtgg 660
 ggtaatcctc agttgc 676

<210> 950
 <211> 225
 <212> PRT
 <213> Neisseria meningitidis

<400> 950
 Xaa Arg Arg Lys Met Leu Asn Val Xaa Xaa Gly Ser Tyr Asp Gly Met
 1 5 10 15
 Lys Gly Phe Thr Ile Ile Glu Phe Leu Val Ala Gly Leu Leu Ser Met

20	25	30
Ile Val Leu Met Ala Val Gly Ser Ser Tyr Phe Thr Ser Arg Lys Leu		
35	40	45
Asn Asp Ala Ala Asn Glu Arg Leu Ala Ala Gln Gln Asp Leu Arg Asn		
50	55	60
Ala Ala Thr Leu Ile Val Arg Asp Ala Arg Met Ala Gly Gly Phe Gly		
65	70	75
Cys Phe Asn Met Ser Glu His Pro Ala Thr Asp Val Ile Pro Asp Thr		
85	90	95
Thr Gln Gln Asn Ser Pro Phe Ser Leu Lys Arg Asn Gly Ile Asp Lys		
100	105	110
Leu Ile Pro Ile Ala Glu Ser Ser Asn Ile Asn Tyr Gln Asn Phe Phe		
115	120	125
Gln Val Gly Ser Ala Leu Ile Phe Gln Tyr Gly Ile Asp Asp Val Asn		
130	135	140
Ala Ser Thr Ala Thr Thr Val Val Ser Ser Cys Ala Ala Ile Ser Lys		
145	150	155
Pro Gly Lys Gln Ile Pro Thr Leu Glu Asp Ala Lys Lys Glu Leu Lys		
165	170	175
Ile Pro Asp Gln Asp Lys Glu Gln Asn Gly Asn Ile Ala Arg Gln Arg		
180	185	190
His Val Val Asn Ala Tyr Ala Val Gly Arg Ile Ala Asp Glu Glu Ser		
195	200	205
Leu Phe Arg Phe Gln Leu Asp Asp Lys Gly Lys Trp Gly Asn Pro Gln		
210	215	220
Leu		
225		

<210> 951
 <211> 999
 <212> DNA
 <213> Neisseria meningitidis

<400> 951
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 attattgaat ttttggttgc gggcatgctc agtatgattg tcctgatggc ggtcgatcg 120
 agttacttca catccccgaa attaatgat gcggcaa acg agcgttttc cgcccaacag 180
 gatttgcgga atgcggcaac attgattgtc cgcgatgcaa gaatggcagg gggcttcggt 240
 tggtaataa tgtccgagca tactaaaaat gatattattg ttgatccaag taagcaaact 300
 caacatgtcc ctgtaaaacc cggtgccaaa caagaaaatc ccctttttc ttttagagtgg 360
 gctaatacta ataataactaa taataataca gctaaattga ttcctattgc tgaatccaca 420
 gatattaaat atccgggttt tgcccaggct cgtccggcat tgattttcca atacggcattc 480
 gatgatcttgc atgcgagtgc tgagactgtt gtagtcagca gctgttccaa aatagcaaaa 540

ccgggttaaga aaatatctac cttgcaagaa gcaaagagtg cattacagat tactaatgat 600
gataaacaaa atggaaatat cacccgtcaa aggcatgtgg tcaatgccta tgcggtcggc 660
aggattgccg gtgaggaagg tttgttccgc ttccaattgg atgataaggg caagtgggt 720
aatcctcagt tgctcgtcaa aaagattaga catatgaaag tgcggtatat ctatgttcc 780
gactgtcctg aagatgacga tgccggcaaa gagaaaaat tcaaatac ggttacattc 840
gacagctcca caaatgtgt tacgcccggc ggggtggagg tttatttag tancgtact 900
gataccaaga ttgccccttc tttagacaat catatttag cttaccgtat cgatgcgaca 960
atacgcgggg gaaatgtatg cgcaaacaga acactttga 999

<210> 952

<211> 332

<212> PRT

<213> Neisseria meningitidis

<400> 952

Met Arg Arg Lys Met Leu Asn Val Pro Lys Gly Asn Tyr Asp Gly Met
1 5 10 15

Lys Gly Phe Thr Ile Ile Glu Phe Leu Val Ala Gly Met Leu Ser Met
20 25 30

Ile Val Leu Met Ala Val Gly Ser Ser Tyr Phe Thr Ser Arg Lys Leu
35 40 45

Asn Asp Ala Ala Asn Glu Arg Leu Ser Ala Gln Gln Asp Leu Arg Asn
50 55 60

Ala Ala Thr Leu Ile Val Arg Asp Ala Arg Met Ala Gly Gly Phe Gly
65 70 75 80

Cys Phe Asn Met Ser Glu His Thr Lys Asn Asp Ile Ile Val Asp Pro
85 90 95

Ser Lys Gln Thr Gln His Val Pro Val Lys Pro Gly Ala Lys Gln Glu
100 105 110

Asn Pro Leu Phe Ser Leu Glu Trp Ala Asn Thr Asn Asn Thr Asn Asn
115 120 125

Asn Thr Ala Lys Leu Ile Pro Ile Ala Glu Ser Thr Asp Ile Lys Tyr
130 135 140

Pro Gly Phe Ala Gln Ala Arg Pro Ala Leu Ile Phe Gln Tyr Gly Ile
145 150 155 160

Asp Asp Leu Asp Ala Ser Ala Glu Thr Val Val Val Ser Ser Cys Ser
165 170 175

Lys Ile Ala Lys Pro Gly Lys Lys Ile Ser Thr Leu Gln Glu Ala Lys
180 185 190

Ser Ala Leu Gln Ile Thr Asn Asp Asp Lys Gln Asn Gly Asn Ile Thr
195 200 205

Arg Gln Arg His Val Val Asn Ala Tyr Ala Val Gly Arg Ile Ala Gly
210 215 220

Glu Glu Gly Leu Phe Arg Phe Gln Leu Asp Asp Lys Gly Lys Trp Gly
225 230 235 240

Asn Pro Gln Leu Leu Val Lys Lys Ile Arg His Met Lys Val Arg Tyr
245 250 255

Ile Tyr Val Ser Asp Cys Pro Glu Asp Asp Ala Gly Lys Glu Glu
260 265 270

Lys Phe Lys Tyr Thr Gly Thr Phe Asp Ser Ser Thr Asn Ala Val Thr
275 280 285

Pro Ala Gly Val Glu Val Leu Leu Ser Xaa Gly Thr Asp Thr Lys Ile
290 295 300

Ala Ala Ser Ser Asp Asn His Ile Tyr Ala Tyr Arg Ile Asp Ala Thr
305 310 315 320

Ile Arg Gly Gly Asn Val Cys Ala Asn Arg Thr Leu
325 330

<210> 953

<211> 666

<212> DNA

<213> Neisseria gonorrhoeae

<400> 953

cccggtgcca aacaagaaaa tccccttttt tccttaaaaa ggagcggcat ggataaacaa 60
ctgattcccg ttgctgaatc catagatatt aaatatccgg gtttatcca gcgccttaac 120
gcattggttt tccaatacgg tatcgatgtat cttgatgcga gtgctgagac tggtagtc 180
agcagctgtt ccaaatatgc aaaaccgggt aagaaaatat ctaccttgca agaagcaaag 240
agtgcattac agattactaa tgatgataaa caaaatggaa atatcacccg tcagaaacat 300
gtggtaatcg cctatgcggt cggcagggtt ggcaataatg aggaaagttt gttccgcttc 360
caattggatg ataaggcga gtggggtaat cctcagttgc tcgtaaaaaa gttaaacgt 420
atggatgtgc ggtatattta tgttccgggt tgcctgaaatg atgaagatgc cggcaaagag 480
gaaaaattca gatatacgaa taaattcgac aaatccaaaa atgctgttac gcctgcccgg 540
gtggaggttt tattggatag cggccttaat gccaaagattt ccgttcttc agacaatagt 600
atttatgctt accgtatcaa tgcgacaata cgccccggaa atgtatgcgc aaacagaaca 660
ctttga 666

<210> 954

<211> 221

<212> PRT

<213> Neisseria gonorrhoeae

<400> 954

Pro Gly Ala Lys Gln Glu Asn Pro Leu Phe Ser Leu Lys Arg Ser Gly
1 5 10 15

Met Asp Lys Gln Leu Ile Pro Val Ala Glu Ser Ile Asp Ile Lys Tyr
20 25 30

Pro Gly Phe Ile Gln Arg Leu Asn Ala Leu Val Phe Gln Tyr Gly Ile
35 40 45

Asp Asp Leu Asp Ala Ser Ala Glu Thr Val Val Val Ser Ser Cys Ser
50 55 60

Lys Ile Ala Lys Pro Gly Lys Lys Ile Ser Thr Leu Gln Glu Ala Lys
65 70 75 80

Ser Ala Leu Gln Ile Thr Asn Asp Asp Lys Gln Asn Gly Asn Ile Thr
85 90 95

Arg Gln Lys His Val Val Asn Ala Tyr Ala Val Gly Arg Phe Gly Asn
100 105 110

Asn Glu Glu Ser Leu Phe Arg Phe Gln Leu Asp Asp Lys Gly Lys Trp
115 120 125

Gly Asn Pro Gln Leu Leu Val Lys Lys Val Lys Arg Met Asp Val Arg
130 135 140

Tyr Ile Tyr Val Ser Gly Cys Pro Glu Asp Glu Asp Ala Gly Lys Glu
145 150 155 160

Glu Lys Phe Arg Tyr Thr Asn Lys Phe Asp Lys Ser Lys Asn Ala Val
165 170 175

Thr Pro Ala Gly Val Glu Val Leu Leu Asp Ser Gly Leu Asn Ala Lys
180 185 190

Ile Ala Ala Ser Ser Asp Asn Ser Ile Tyr Ala Tyr Arg Ile Asn Ala
195 200 205

Thr Ile Arg Gly Gly Asn Val Cys Ala Asn Arg Thr Leu
210 215 220

<210> 955

<211> 942

<212> DNA

<213> Neisseria meningitidis

<400> 955

atgagacgta aaatgcctaaa cgtaccaaaaa ggcagttatg atggtatgaa aggttttacc 60
attattgaat ttttgttgc gggcctgctc agttagtattg tcctgtatggc ggtcgatcg 120
agttacttca catcccgaa attaaatgtat gccccaaacg agcgttgc cgcgcacac 180
gatttgcgga atgcggcaac attgattgtc cgccatgcga gaatggcagg cggcttcgg 240
tgtttcaata tgtccgagca tcctgcacta gatgttattc ccgatacgc gcaacaaaat 300
tctcctttt cctaaaaag gaacggata gataaactta ttcccatacg ggaatcttca 360
aatatcaatt atcagaattt ttccaggtt ggtagcgcatttgattttca atacggaatc 420
gatgatgtta atgcggcac cggactacc gtcgtcggca gctgtgcgc aatatcgaaa 480
ccggggcaagc aaatccctac tttagaagat gcaaaaaaag aattgaagat tccggatcag 540
gataaggagc aaaatggcaa tatagcgcgt caaaggcatg tggtaatgc ctatgcggc 600
ggcaggattt cccatggaa aggtttgttc cgcttccat tggatgataa gggcaagtgg 660
ggtaatcctc agttgctcgt gaaaaaggtt agacatatga aagtgcggta tatctatgtt 720
tccggctgtc ctgaagatga cgtggccggc aaagaggaaa cattcaaata tacggataaa 780
ttcgacagcg cccaaaatgc tggtaatgc cccgggtgg aggttttatt gagtagcgg 840
actgatacca agattgccgc ttcttcagac aatcatattt atgcttaccg tatcgatgcg 900
acaatacgcg gggaaatgt atgcgcaaac agaacacttt ga 942

<210> 956
<211> 313
<212> PRT
<213> Neisseria meningitidis

<400> 956

Met Arg Arg Lys Met Leu Asn Val Pro Lys Gly Ser Tyr Asp Gly Met
1 5 10 15

Lys Gly Phe Thr Ile Ile Glu Phe Leu Val Ala Gly Leu Leu Ser Met
20 25 30

Ile Val Leu Met Ala Val Gly Ser Ser Tyr Phe Thr Ser Arg Lys Leu
35 40 45

Asn Asp Ala Ala Asn Glu Arg Leu Ala Ala Gln Gln Asp Leu Arg Asn
50 55 60

Ala Ala Thr Leu Ile Val Arg Asp Ala Arg Met Ala Gly Gly Phe Gly
65 70 75 80

Cys Phe Asn Met Ser Glu His Pro Ala Thr Asp Val Ile Pro Asp Thr
85 90 95

Thr Gln Gln Asn Ser Pro Phe Ser Leu Lys Arg Asn Gly Ile Asp Lys
100 105 110

Leu Ile Pro Ile Ala Glu Ser Ser Asn Ile Asn Tyr Gln Asn Phe Phe
115 120 125

Gln Val Gly Ser Ala Leu Ile Phe Gln Tyr Gly Ile Asp Asp Val Asn
130 135 140

Ala Ser Thr Ala Thr Thr Val Val Ser Ser Cys Ala Ala Ile Ser Lys
145 150 155 160

Pro Gly Lys Gln Ile Pro Thr Leu Glu Asp Ala Lys Lys Glu Leu Lys
165 170 175

Ile Pro Asp Gln Asp Lys Glu Gln Asn Gly Asn Ile Ala Arg Gln Arg
180 185 190

His Val Val Asn Ala Tyr Ala Val Gly Arg Ile Ala Asp Glu Glu Gly
195 200 205

Leu Phe Arg Phe Gln Leu Asp Asp Lys Gly Lys Trp Gly Asn Pro Gln
210 215 220

Leu Leu Val Lys Lys Val Arg His Met Lys Val Arg Tyr Ile Tyr Val
225 230 235 240

Ser Gly Cys Pro Glu Asp Asp Ala Gly Lys Glu Glu Thr Phe Lys
245 250 255

Tyr Thr Asp Lys Phe Asp Ser Ala Gln Asn Ala Val Thr Pro Ala Gly

	260	265	270
Val Glu Val Leu Leu Ser Ser Gly Thr Asp Thr Lys Ile Ala Ala Ser			
275	280	285	
Ser Asp Asn His Ile Tyr Ala Tyr Arg Ile Asp Ala Thr Ile Arg Gly			
290	295	300	
Gly Asn Val Cys Ala Asn Arg Thr Leu			
305	310		

<210> 957
<211> 618
<212> DNA
<213> Neisseria meningitidis

<400> 957

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aataatacag ctaaattgat tcctattgct gaatccacag atattaaata tccgggtttt 60
gccaggctc gtccggcatt gatTTccaa tacggcatcg atgatcttga tgcgagtgc 120
gagactgtt tagtcagcag ctgttccaaa atagcaaaac cgggtaagaa aatatctacc 180
ttgcaagaag caaagagtcg attacagatt actaatgtt ataaacaaaa tggaaatatc 240
accctcaaa ggcatgttgtt caatgcctat gcggcggca ggattgccgg tgaggaaggt 300
ttgtccgct tccaatttggta tgataagggc aagtggggta atcctcagtt gctcgtgaaa 360
aagatttagac atatgaaaatg gcggtatatc tatgtttccg actgtcctga agatgacgt 420
gcggcggcaaaag aggaaaaatt caaatatacg ggtacattcg acagctccac aaatgctgtt 480
acgcccggccg gggtgaggt ttatttgagt agcggtactg ataccaagat tgccgcttct 540
tcagacaatc atatttatgc ttaccgtatc gatgcgacaa tacgcggggg aaatgtatgc 600
gcaaacagaa cactttga
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618

<210> 958
<211> 205
<212> PRT
<213> Neisseria meningitidis

<400> 958

Asn Asn Thr Ala Lys Leu Ile Pro Ile Ala Glu Ser Thr Asp Ile Lys			
1	5	10	15

Tyr Pro Gly Phe Ala Gln Ala Arg Pro Ala Leu Ile Phe Gln Tyr Gly			
20	25	30	

Ile Asp Asp Leu Asp Ala Ser Ala Glu Thr Val Val Val Ser Ser Cys			
35	40	45	

Ser Lys Ile Ala Lys Pro Gly Lys Lys Ile Ser Thr Leu Gln Glu Ala			
50	55	60	

Lys Ser Ala Leu Gln Ile Thr Asn Asp Asp Lys Gln Asn Gly Asn Ile			
65	70	75	80

Thr Arg Gln Arg His Val Val Asn Ala Tyr Ala Val Gly Arg Ile Ala			
85	90	95	

Gly Glu Glu Gly Leu Phe Arg Phe Gln Leu Asp Asp Lys Gly Lys Trp			
100	105	110	

Gly Asn Pro Gln Leu Leu Val Lys Lys Ile Arg His Met Lys Val Arg
115 120 125

Tyr Ile Tyr Val Ser Asp Cys Pro Glu Asp Asp Asp Ala Gly Lys Glu
130 135 140

Glu Lys Phe Lys Tyr Thr Gly Thr Phe Asp Ser Ser Thr Asn Ala Val
145 150 155 160

Thr Pro Ala Gly Val Glu Val Leu Leu Ser Ser Gly Thr Asp Thr Lys
165 170 175

Ile Ala Ala Ser Ser Asp Asn His Ile Tyr Ala Tyr Arg Ile Asp Ala
180 185 190

Thr Ile Arg Gly Gly Asn Val Cys Ala Asn Arg Thr Leu
195 200 205

<210> 959

<211> 612

<212> DNA

<213> Neisseria gonorrhoeae

<400> 959

atgcgcaaac agaacacttt gacaggaatc ccgacttctg acggacagag ggggtccgca 60
ctgttatcg tgctgatggt gatgatagtc gtggccttt tgggttgtaac tgccgcccag 120
tcctacaata ccgaacagag gatcagtgcc aacgaatcag acaggaaatt ggctttgtct 180
ttagccgagg cggcttgcg ggagggcgaa tttcaaggttt tggatttsga atatgctgcg 240
gacagtaagg ttacgtttag cgaaaactgt gaaaaaggc ttgttaccgc agtgaatgtg 300
cggacaaata ataatggtag tgaagaggct tttggcaata tcgtggtgca aggcaagccc 360
gccgttgagg cggtaaacg ttcttgccct gcaaagtctg gcaaaaatcc taccgacctg 420
tgcattgaca ataaaaggat ggaatataat aaaggcgcgg caggcgtcag caaatgccc 480
cgctatatata tcgaatattt aggcgtaag aacggacaaa atgtttatcg ggttactgcc 540
aaggcttggg gtaagaatgc caataccgtg gtcgtccttc aatcttatgt aggcaataat 600
gatgagcaat aa 612

<210> 960

<211> 203

<212> PRT

<213> Neisseria gonorrhoeae

<400> 960

Met Arg Lys Gln Asn Thr Leu Thr Gly Ile Pro Thr Ser Asp Gly Gln
1 5 10 15

Arg Gly Ser Ala Leu Phe Ile Val Leu Met Val Met Ile Val Val Ala
20 25 30

Phe Leu Val Val Thr Ala Ala Gln Ser Tyr Asn Thr Glu Gln Arg Ile
35 40 45

Ser Ala Asn Glu Ser Asp Arg Lys Leu Ala Leu Ser Leu Ala Glu Ala
50 55 60

Ala	Leu	Arg	Glu	Gly	Glu	Phe	Gln	Val	Leu	Asp	Leu	Glu	Tyr	Ala	Ala
65															80
Asp	Ser	Lys	Val	Thr	Phe	Ser	Glu	Asn	Cys	Glu	Lys	Gly	Leu	Cys	Thr
			85						90						95
Ala	Val	Asn	Val	Arg	Thr	Asn	Asn	Asn	Gly	Ser	Glu	Glu	Ala	Phe	Gly
			100						105						110
Asn	Ile	Val	Val	Gln	Gly	Lys	Pro	Ala	Val	Glu	Ala	Val	Lys	Arg	Ser
			115				120								125
Cys	Pro	Ala	Lys	Ser	Gly	Lys	Asn	Ser	Thr	Asp	Leu	Cys	Ile	Asp	Asn
			130			135				140					
Lys	Gly	Met	Glu	Tyr	Asn	Lys	Gly	Ala	Ala	Gly	Val	Ser	Lys	Met	Pro
			145			150				155					160
Arg	Tyr	Ile	Ile	Glu	Tyr	Leu	Gly	Val	Lys	Asn	Gly	Gln	Asn	Val	Tyr
			165					170							175
Arg	Val	Thr	Ala	Lys	Ala	Trp	Gly	Lys	Asn	Ala	Asn	Thr	Val	Val	Val
			180					185							190
Leu	Gln	Ser	Tyr	Val	Gly	Asn	Asn	Asp	Glu	Gln					
			195			200									

<210> 961
<211> 541
<212> DNA
<213> Neisseria meningitidis

<400> 961
gggtttgcac tgttaatcgt gctgatggtg atratcgctcg tggcttywtg gwtgtactg 60
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ctwtgtctt ggccgagkcg kctwtgcggg aaggcgaact tcaggttttgc gatttggaaat 180
atgatacggc cagtaagggtt acatttagcg aaaactgtgg aaaaggtctg tstgccgcag 240
tgaatgtgcg gacaaataat gataatgaag aggctttga caatatcgctg gtgcaaggca 300
agccccaccgt tgaggccgtg aagcgttctt gccctgc当地 ttctaccgac ctgtgcatttg 360
acaagaaaagg gwtggaatat aagaaaaggca cgagaagcgt cacaaaaatgc cacgttat 420
tatcgaatat ttgggcgtgw agaacggaga aaatgtttat cgggttactg ccaaggcttg 480
gggtaagaat gccaataccg tggtcgtcct tcaatcttata gtaagcaata atgtatgagta 540
a
541

<210> 962
<211> 180
<212> PRT
<213> Neisseria meningitidis

<400> 962
Gly Phe Ala Leu Leu Ile Val Leu Met Val Xaa Ile Val Val Ala Phe
1 5 10 15
Xaa Xaa Val Thr Ala Ala Gln Ser Tyr Asn Thr Glu Gln Arg Ile Ser
20 25 30

Xaa Asn Glu Ser Asp Arg Lys Leu Ala Xaa Ser	Leu Ala Glu Xaa Xaa		
35	40	45	
Xaa Arg Glu Gly Glu Leu Gln Val Leu Asp	Leu Glu Tyr Asp Thr Asp		
50	55	60	
Ser Lys Val Thr Phe Ser Glu Asn Cys Gly Lys	Gly Leu Xaa Ala Ala		
65	70	75	80
Val Asn Val Arg Thr Asn Asn Asp Asn Glu	Glu Ala Phe Asp Asn Ile		
85	90	95	
Val Val Gln Gly Lys Pro Thr Val Glu Ala Val	Lys Arg Ser Cys Pro		
100	105	110	
Ala Asn Ser Thr Asp Leu Cys Ile Asp Lys Lys	Gly Xaa Glu Tyr Lys		
115	120	125	
Lys Gly Thr Arg Ser Val Thr Lys Met Pro Arg	Tyr Ile Ile Glu Tyr		
130	135	140	
Leu Gly Val Xaa Asn Gly Glu Asn Val Tyr Arg	Val Thr Ala Lys Ala		
145	150	155	160
Trp Gly Lys Asn Ala Asn Thr Val Val Val	Leu Gln Ser Tyr Val Ser		
165	170	175	
Asn Asn Asp Glu			
180			

<210> 963

<211> 594

<212> DNA

<213> Neisseria meningitidis

<400> 963

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tcttacaata ccgagcagcg gatcagtgc aacgaatcag acaggaaatt ggctttgtct 180
ttggccgagg cggcttgcg ggaaggcgaa cttcaggttt tggatttgg a atatgatacg 240
gacagtaagg ttacatattag cggaaaactgt ggaaaaggtc tgtgtaccgc agtgaatgtg 300
cgacaaaata atgataatga agaggctttt gacaatatcg tggtgcaagg caagcccacc 360
gttggaggcgg tgaagcgttc ttgcactgca aaatctacag gcctgtgcat tgacaataaa 420
ggatggaat ataagaaagg cacgcaaagc gtcagaaaa tgccacgta tattatcgaa 480
tatttggcgt tgaagaacgg agaaaatgtt tatcgggtta ctgccaaggc ttggggtaag 540
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<210> 964

<211> 197

<212> PRT

<213> Neisseria meningitidis

<400> 964

Met Arg Lys Gln Asn Thr Leu Thr Gly Ile Pro Thr Ser Asp Gly Gln

1

5

10

15

Arg Gly Phe Ala Leu Phe Ile Val Leu Met Val Met Ile Val Val Ala
20 25 30

Phe Leu Val Val Thr Ala Ala Gln Ser Tyr Asn Thr Glu Gln Arg Ile
35 40 45

Ser Ala Asn Glu Ser Asp Arg Lys Leu Ala Leu Ser Leu Ala Glu Ala
50 55 60

Ala Leu Arg Glu Gly Glu Leu Gln Val Leu Asp Leu Glu Tyr Asp Thr
65 70 75 80

Asp Ser Lys Val Thr Phe Ser Glu Asn Cys Gly Lys Gly Leu Cys Thr
85 90 95

Ala Val Asn Val Arg Thr Asn Asn Asp Asn Glu Glu Ala Phe Asp Asn
100 105 110

Ile Val Val Gln Gly Lys Pro Thr Val Glu Ala Val Lys Arg Ser Cys
115 120 125

Thr Ala Lys Ser Thr Gly Leu Cys Ile Asp Asn Lys Gly Met Glu Tyr
130 135 140

Lys Lys Gly Thr Gln Ser Val Ser Lys Met Pro Arg Tyr Ile Ile Glu
145 150 155 160

Tyr Leu Gly Val Lys Asn Gly Glu Asn Val Tyr Arg Val Thr Ala Lys
165 170 175

Ala Trp Gly Lys Asn Ala Asn Thr Val Val Val Leu Gln Ser Tyr Val
180 185 190

Ser Asn Asn Asp Glu
195

<210> 965

<211> 594

<212> DNA

<213> Neisseria meningitidis

<400> 965

atgcgcaaac agaacacttt gacggaaatc ccgacttctg acggacagag ggggttgca 60
ctgttatcg tgctgatgg t gatgatcgct gtggctttt tggttgtaac tgccgcgcag 120
tcttacaata ccgagcagcg gatcagtgcc aacgaatcag acaggaaatt ggctttgtct 180
ttggccgagg cggcttgcg ggaaggcga a cttcaggttt tggattttgaa atatgatacg 240
gacagtaagg ttacattnag cgaaaactgt ggaaaaggc t g t g t g c c g c agtgaatgtg 300
cgacaaata atgataatga agaggcttt gacaatatcg tggtgcaagg caagccccacc 360
gttgaggcgg tgaagcgttc ttgcctgc aatttaccc acctgtgcat tgacaagaaa 420
gggatggaat ataagaaaagg cacgagaagc gtcagcaaaa tgccacgtta tattatcgaa 480
tatttggcgt tgaagaacgg agaaaatgtt tatcgggtta ctgccaaggc ttgggtaag 540
aatgccaata ccgtggtcgt ccttcaatct tatgtaagca ataatgatga gtaa 594

<210> 966
<211> 197
<212> PRT
<213> Neisseria meningitidis

<400> 966
Met Arg Lys Gln Asn Thr Leu Thr Gly Ile Pro Thr Ser Asp Gly Gln
1 5 10 15

Arg Gly Phe Ala Leu Phe Ile Val Leu Met Val Met Ile Val Val Ala
20 25 30

Phe Leu Val Val Thr Ala Ala Gln Ser Tyr Asn Thr Glu Gln Arg Ile
35 40 45

Ser Ala Asn Glu Ser Asp Arg Lys Leu Ala Leu Ser Leu Ala Glu Ala
50 55 60

Ala Leu Arg Glu Gly Glu Leu Gln Val Leu Asp Leu Glu Tyr Asp Thr
65 70 75 80

Asp Ser Lys Val Thr Phe Ser Glu Asn Cys Gly Lys Gly Leu Cys Ala
85 90 95

Ala Val Asn Val Arg Thr Asn Asn Asp Asn Glu Glu Ala Phe Asp Asn
100 105 110

Ile Val Val Gln Gly Lys Pro Thr Val Glu Ala Val Lys Arg Ser Cys
115 120 125

Pro Ala Asn Ser Thr Asp Leu Cys Ile Asp Lys Lys Gly Met Glu Tyr
130 135 140

Lys Lys Gly Thr Arg Ser Val Ser Lys Met Pro Arg Tyr Ile Ile Glu
145 150 155 160

Tyr Leu Gly Val Lys Asn Gly Glu Asn Val Tyr Arg Val Thr Ala Lys
165 170 175

Ala Trp Gly Lys Asn Ala Asn Thr Val Val Val Leu Gln Ser Tyr Val
180 185 190

Ser Asn Asn Asp Glu
195

<210> 967
<211> 612
<212> DNA
<213> Neisseria gonorrhoeae

<400> 967
atgaagaata atgattgctt gcgcctgaaa aatccccagt ccggtatggc gttgatagaa 60
gtcttggtcg ctagtcgt tctgaccatc ggtatttgg cattgctgtc cgtacagttg 120
cgacagtcg ctccgtcag ggaggcggaa acgcaaacca tcgtcagccaa aatcacgcaa 180
aacctgtatgg aaggaatgtt gatgaatccg accattgatt tggacagccaa caagaaaaac 240
tatagtcttt acatggaaa acagacacta tcagctgtgg atggtgagtt tatgcttgat 300

gccgagaaaa gtaaggcgca gttggcagag gaacaattga agagat tag tcatgagctg 360
aaaaaatgcct tgccggatgc ggtagctatt cattacgccc tctgcaagga ttcgtcgggt 420
gacgcgccga cattgtccga cagcggtgct ttttcttcaa attgcgacaa taaggcaaac 480
ggggataactt tgattaaagt attgtgggta aatgattcg cgagggattc ggatatttcc 540
cgtagaatac ttgaagtgag cgccgacaat atcgatatata cctatcaggc aagggtcgga 600
ggtcgtaat ga 612

<210> 968

<211> 203

<212> PRT

<213> Neisseria gonorrhoeae

<400> 968

Met Lys Asn Asn Asp Cys Leu Arg Leu Lys Asn Pro Gln Ser Gly Met
1 5 10 15

Ala Leu Ile Glu Val Leu Val Ala Met Leu Val Leu Thr Ile Gly Ile
20 25 30

Leu Ala Leu Leu Ser Val Gln Leu Arg Thr Val Ala Ser Val Arg Glu
35 40 45

Ala Glu Thr Gln Thr Ile Val Ser Gln Ile Thr Gln Asn Leu Met Glu
50 55 60

Gly Met Leu Met Asn Pro Thr Ile Asp Leu Asp Ser Asn Lys Lys Asn
65 70 75 80

Tyr Ser Leu Tyr Met Gly Lys Gln Thr Leu Ser Ala Val Asp Gly Glu
85 90 95

Phe Met Leu Asp Ala Glu Lys Ser Lys Ala Gln Leu Ala Glu Glu Gln
100 105 110

Leu Lys Arg Phe Ser His Glu Leu Lys Asn Ala Leu Pro Asp Ala Val
115 120 125

Ala Ile His Tyr Ala Val Cys Lys Asp Ser Ser Gly Asp Ala Pro Thr
130 135 140

Leu Ser Asp Ser Gly Ala Phe Ser Ser Asn Cys Asp Asn Lys Ala Asn
145 150 155 160

Gly Asp Thr Leu Ile Lys Val Leu Trp Val Asn Asp Ser Ala Gly Asp
165 170 175

Ser Asp Ile Ser Arg Thr Asn Leu Glu Val Ser Gly Asp Asn Ile Val
180 185 190

Tyr Thr Tyr Gln Ala Arg Val Gly Gly Arg Glu
195 200

<210> 969

<211> 609

<212> DNA

<213> Neisseria meningitidis

<400> 969

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cgacagtcn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 180
nnnttgatgg agggaatgtt gatgaatccg accattgatt cgacagcaa caagaaaaac 240
tataatctt acatggaaa ccatacacta tcagctgtgg atggcgatt tgcgattgat 300
gccatgaaaa ctaaggggca attggcagag gcacaattga agagatttag ttatgagctg 360
aaaaaatgcct tgccggatgc ggcagccatc cattacgccc tctgcaagga ttcgtcggt 420
aacgcgccga cattgtccgg caatgccttt tcttcaaatt gcacaataaa ggcaaacggg 480
gatacttaa ttaaagtatt gtggtaaat gattcggcag gggattcggg tatttccgt 540
acgaatctt aggtgagcgg cgacaatatc gtatatactt atcaggcaag ggtcggaggt 600
cggaatga 609

<210> 970

<211> 202

<212> PRT

<213> Neisseria meningitidis

<400> 970

Met Lys Asn Asn Asp Cys Phe Arg Leu Lys Asp Ser Gln Ser Gly Met
1 5 10 15

Ala Leu Ile Glu Val Leu Val Ala Met Leu Val Leu Thr Ile Gly Ile
20 25 30

Leu Ala Leu Leu Ser Val Gln Leu Arg Thr Val Xaa Xaa Xaa Xaa Xaa
35 40 45

Xaa Leu Met Glu
50 55 60

Gly Met Leu Met Asn Pro Thr Ile Asp Ser Asp Ser Asn Lys Lys Asn
65 70 75 80

Tyr Asn Leu Tyr Met Gly Asn His Thr Leu Ser Ala Val Asp Gly Asp
85 90 95

Phe Ala Ile Asp Ala Met Lys Thr Lys Gly Gln Leu Ala Glu Ala Gln
100 105 110

Leu Lys Arg Phe Ser Tyr Glu Leu Lys Asn Ala Leu Pro Asp Ala Ala
115 120 125

Ala Ile His Tyr Ala Val Cys Lys Asp Ser Ser Gly Asn Ala Pro Thr
130 135 140

Leu Ser Gly Asn Ala Phe Ser Ser Asn Cys Asp Asn Lys Ala Asn Gly
145 150 155 160

Asp Thr Leu Ile Lys Val Leu Trp Val Asn Asp Ser Ala Gly Asp Ser
165 170 175

Asp Ile Ser Arg Thr Asn Leu Glu Val Ser Gly Asp Asn Ile Val Tyr
180 185 190

Thr Tyr Gln Ala Arg Val Gly Gly Arg Glu
195 200

<210> 971
<211> 615
<212> DNA
<213> Neisseria meningitidis

<400> 971
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gtcttggtcg ctatgctcg tctgaccatc ggtattttgg cactattgtc tgttcagttg 120
cgcacagtcg cttccgtcag ggaggcagag acgcaaacc aatcacgcaa 180
aacctgatgg aaggaatgtt gatgaatccg accattgatt ccggacagcaa caagaaaaac 240
tataatctt acatggaaa ccatcatgca ctatcagttg tggatggcga ttttcaggtt 300
gatgccataa aaactaagac gcagttggca gaggcacaat tgaagagatt tagttatgag 360
ctgaaaaatg ctttgccgga tgcggcagcc atccattacg ccgtctgcaa ggattcgtcg 420
ggtgttgcgc cgacattgtc cgccggcagt acttttctt caaattgcga tggtagtgca 480
aatggggata ctttgattaa agtattgtgg gttaaatgatt ccgcaggga ttccggatatac 540
gcccgtacga atcttgagac gaacggcaac aatatcgtat atacctatca ggcaagggtc 600
615
ggaggtcggg aatga

<210> 972
<211> 204
<212> PRT
<213> Neisseria meningitidis

<400> 972
Met Lys Asn Asn Asp Cys Phe Arg Leu Lys Asn Pro Gln Ser Gly Met.
1 5 10 15

Ala Leu Ile Glu Val Leu Val Ala Met Leu Val Leu Thr Ile Gly Ile
20 25 30

Leu Ala Leu Leu Ser Val Gln Leu Arg Thr Val Ala Ser Val Arg Glu
35 40 45

Ala Glu Thr Gln Thr Ile Val Ser Gln Ile Thr Gln Asn Leu Met Glu
50 55 60

Gly Met Leu Met Asn Pro Thr Ile Asp Ser Asp Ser Asn Lys Lys Asn
65 70 75 80

Tyr Asn Leu Tyr Met Gly Asn His His Ala Leu Ser Val Val Asp Gly
85 90 95

Asp Phe Gln Val Asp Ala Ile Lys Thr Lys Thr Gln Leu Ala Glu Ala
100 105 110

Gln Leu Lys Arg Phe Ser Tyr Glu Leu Lys Asn Ala Leu Pro Asp Ala
115 120 125

Ala Ala Ile His Tyr Ala Val Cys Lys Asp Ser Ser Gly Val Ala Pro
130 135 140

Thr Leu Ser Ala Gly Ser Thr Phe Ser Ser Asn Cys Asp Gly Ser Ala
145 150 155 160

Asn Gly Asp Thr Leu Ile Lys Val Leu Trp Val Asn Asp Ser Ala Gly
165 170 175

Asp Ser Asp Ile Ala Arg Thr Asn Leu Glu Thr Asn Gly Asn Asn Ile
180 185 190

Val Tyr Thr Tyr Gln Ala Arg Val Gly Gly Arg Glu
195 200

<210> 973

<211> 609

<212> DNA

<213> Neisseria meningitidis

<400> 973

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gtcttggttg ctatgctcg tctgaccatc ggtattttgg cactattgtc tgtacagttg 120
cggacagtcg cttccgtcag ggaggcggag acacaaacca tcgtcagcca aatcacgcaa 180
aacctgatgg agggaatgtt gatgaatccg accattgatt cggacagcaa caaaaaaaac 240
tataatctt acatgggaaa ccatacacta tcagctgtgg atggcgattt tgcgatttat 300
gccatgaaaa ctaaggggca attggcagag gcacaattga agagatttag ttatgagctg 360
aaaaaatgcct tgccggatgc ggcagccatc cattacgccc tctgcaagga ttctgcgggt 420
aacgcgcccga cattgtccgg caatgcttt tcttcaaatt gcgacaataa ggcaaacggg 480
gatacttaa ttaaagtatt gtggtaaat gattcggcag gggattcggta tatttccgt 540
acgaatcttgc aggtgagcgg cgacaatatc gtatatactt atcaggcaag ggtcggaggt 600
cgggaaatga 609

<210> 974

<211> 202

<212> PRT

<213> Neisseria meningitidis

<400> 974

Met Lys Asn Asn Asp Cys Phe Arg Leu Lys Asp Ser Gln Ser Gly Met
1 5 10 15

Ala Leu Ile Glu Val Leu Val Ala Met Leu Val Leu Thr Ile Gly Ile
20 25 30

Leu Ala Leu Leu Ser Val Gln Leu Arg Thr Val Ala Ser Val Arg Glu
35 40 45

Ala Glu Thr Gln Thr Ile Val Ser Gln Ile Thr Gln Asn Leu Met Glu
50 55 60

Gly Met Leu Met Asn Pro Thr Ile Asp Ser Asp Ser Asn Lys Lys Asn
65 70 75 80

Tyr Asn Leu Tyr Met Gly Asn His Thr Leu Ser Ala Val Asp Gly Asp
85 90 95

Phe Ala Ile Asp Ala Met Lys Thr Lys Gly Gln Leu Ala Glu Ala Gln

100	105	110
Leu Lys Arg Phe Ser Tyr Glu Leu Lys Asn Ala Leu Pro Asp Ala Ala		
115	120	125
Ala Ile His Tyr Ala Val Cys Lys Asp Ser Ser Gly Asn Ala Pro Thr		
130	135	140
Leu Ser Gly Asn Ala Phe Ser Ser Asn Cys Asp Asn Lys Ala Asn Gly		
145	150	155
Asp Thr Leu Ile Lys Val Leu Trp Val Asn Asp Ser Ala Gly Asp Ser		
165	170	175
Asp Ile Ser Arg Thr Asn Leu Glu Val Ser Gly Asp Asn Ile Val Tyr		
180	185	190
Thr Tyr Gln Ala Arg Val Gly Gly Arg Glu		
195	200	

<210> 975

<211> 342

<212> DNA

<213> Neisseria gonorrhoeae

<400> 975

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atgacgcaca cagcctctcc acgtgatgaa ttcatacgca gcataaaaaga aagttcggcc 60
atgctgatttgcggcc ttgggcattt atactcggtt tgcaggcgcc gcaaaaagg 120
atggggccggc tggaaatgtt gctgatgacg gggatgaact ttgcccggcc ctccgaattt 180
gccacggta acctgtgggc ggaacctctt ccgataactgc ttatcgccac cataaccttt 240
atgattaatt cgccgcatat cctgatgggg ggccggcgctt gccacgcaca tgaaagaaat 300
accgctgaaa aaagccgcgc ccgcgcgttt ttttatgtgt ga 342
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<210> 976

<211> 113

<212> PRT

<213> Neisseria gonorrhoeae

<400> 976

Met Thr His Thr Ala Ser Pro Arg Asp Glu Phe Ile Arg Gly Ile Lys			
1	5	10	15

Glu Ser Ser Pro Met Leu Ile Gly Leu Leu Pro Trp Ala Leu Ile Leu			
20	25	30	

Gly Met Gln Gly Gly Gln Lys Gly Met Gly Arg Leu Glu Met Leu Leu			
35	40	45	

Met Thr Gly Met Asn Phe Ala Gly Gly Ser Glu Phe Ala Thr Val Asn			
50	55	60	

Leu Trp Ala Glu Pro Leu Pro Ile Leu Leu Ile Ala Thr Ile Thr Phe			
65	70	75	80

Met Ile Asn Ser Arg His Ile Leu Met Gly Gly Ala Cys His Ala

85	90	95
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His Glu Arg Asn Thr Ala Glu Lys Ser Arg Ala Arg Ala Val Phe Tyr
 100 105 110
 Val

<210> 977
 <211> 336
 <212> DNA
 <213> Neisseria meningitidis

<400> 977
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 gattgggctg ctgcctggg cattaatact cggtagtcgag ggcggacaaa aaggcatgag 120
 ctggctggaa atgttggta tgaccagtat gaacttcgcc ggcggctccg agtttgccac 180
 ggtcaacctg tgggcsgaac ctctgccat actgcttatac gccaccgtaa cctttatgtat 240
 taattctcg catatctga tggggcggc gcttggcccg cacctgaaaag gaataccgct 300
 gaaaaaagcc gtgcccgcac tgtttttat gtgtga 336

<210> 978
 <211> 112
 <212> PRT
 <213> Neisseria meningitidis

<400> 978
 Met His Thr Pro Ser Pro His Asn Glu Phe Ile Arg Gly Ile Lys Glu
 1 5 10 15

Ser Ser Pro Met Leu Ile Gly Leu Leu Pro Trp Ala Leu Ile Leu Gly
 20 25 30

Met Gln Gly Gly Gln Lys Gly Met Ser Trp Leu Glu Met Leu Leu Met
 35 40 45

Thr Ser Met Asn Phe Ala Gly Gly Ser Glu Phe Ala Thr Val Asn Leu
 50 55 60

Trp Ala Glu Pro Leu Pro Ile Leu Ile Ala Thr Val Thr Phe Met
 65 70 75 80

Ile Asn Ser Arg His Ile Leu Met Gly Gly Gly Ala Cys Pro Ala Pro
 85 90 95

Glu Arg Asn Thr Ala Glu Lys Ser Arg Ala Arg Thr Val Phe Tyr Val
 100 105 110

<210> 979
 <211> 341
 <212> DNA

<213> Neisseria meningitidis

<400> 979

atgacacacaca taagctgcc ccgtaacgaa tttatacgcg gcatcaaaga aagttcgccc 60
atgctgatcg ggctttgcc ttgggcatta atactcggta tgcagggtgg aaaaaaaaaggc 120
atgagctggc tggaaatgtt gttgatgacc ggtatgaact tcgccccgg ctccgagttt 180
gccacggta acctgtggc ggaacctctg ccgatactgc ttatcgccac cgtaaccttt 240
atgattaatt ctcggcatat cctgatgggg gccgcacttg ccccgacactt gaaagaaaata 300
ccgctgaaaa aagccgtgcc cgcaactgttt tttatgtgtg a 341

<210> 980

<211> 113

<212> PRT

<213> Neisseria meningitidis

<400> 980

Met Thr His Ile Ser Ser Pro Arg Asn Glu Phe Ile Arg Gly Ile Lys
1 5 10 15

Glu Ser Ser Pro Met Leu Ile Gly Leu Leu Pro Trp Ala Leu Ile Leu
20 25 30

Gly Met Gln Gly Gln Lys Gly Met Ser Trp Leu Glu Met Leu Leu
35 40 45

Met Thr Gly Met Asn Phe Ala Gly Ser Glu Phe Ala Thr Val Asn
50 55 60

Leu Trp Ala Glu Pro Leu Pro Ile Leu Leu Ile Ala Thr Val Thr Phe
65 70 75 80

Met Ile Asn Ser Arg His Ile Leu Met Gly Xaa Gly Thr Cys Pro Ala
85 90 95

Pro Glu Arg Asn Thr Ala Glu Lys Ser Arg Ala Arg Thr Val Phe Tyr
100 105 110

Val

<210> 981

<211> 735

<212> DNA

<213> Neisseria gonorrhoeae

<400> 981

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ttgagggggc gtttcaacg aataggcgcg gttggcatgt tgataataat aatcctgatg 120
gcccggatcg gaacccaaac ggtcgtaacc gaggttgacg ctcaggttgtt ggcggatttt 180
ggcggtatcg aaggatttt tgaatgccgc ctgcaagagc ctgtggcttt ccccgtaaat 240
cacgcgtcg gatttgtagt aggaaagacgg cttgtcgca ctcggccggc aatatttgc 300
cgaaccgtcg gcggAACAGT gctgtcgctg aaaatgattt tccaaacccg tgccctgccc 360
gtcgtaagag aggcggccat aatccgcccc agtgtcttta tcggcatttg tatagacata 420
ttccaaacccg tagcgcttt tgggtgcgt ctcgtcgtaa aacacgcccc taccgtattc 480
cgccccacc tccgcaccgt tttcaccgtt ggtaatcagc ccgtgttatt tgccggcc 540

cgcttatttg ccgttagcctc ttatcgatcc gtattttta ttttcatcaa aaaccgcctt 600
ggtcaggaat gccggaaccg tcatacgcg cgtgtcgaaa gtttgctgct tgcttcgag 660
tatgcccgccg atgtatgcc gtttgtttc aaaacgaaaa cccgggcgga acagccacga 720
ccggcttcg tatga 735

<210> 982
<211> 244
<212> PRT
<213> Neisseria gonorrhoeae

<400> 982
Met Pro Asp Pro Ile Gly Ile Leu Phe Ala Ala Val Gly Val Asp Phe
1 5 10 15
Phe Ala Val Val Leu Arg Gly Arg Phe Gln Arg Ile Gly Ala Val Gly
20 25 30
Met Leu Ile Ile Ile Leu Met Ala Glu Val Gly Thr Lys Thr Val
35 40 45
Val Thr Glu Val Asp Ala Gln Val Val Ala Asp Phe Gly Gly Ile Glu
50 55 60
Gly Phe Phe Glu Cys Arg Leu Gln Glu Pro Val Ala Phe Pro Val Asn
65 70 75 80
His Ala Val Gly Phe Val Val Gly Arg Arg Leu Val Gly Thr Arg Ala
85 90 95
Ala Ile Phe Val Arg Thr Val Gly Gly Thr Val Arg Leu Leu Lys Met
100 105 110
Ile Val Gln Thr Asp Ala Leu Pro Val Val Arg Glu Ala Gly Ile Ile
115 120 125
Arg Pro Ser Val Phe Ile Gly Ile Gly Ile Asp Ile Phe Gln Thr Val
130 135 140
Ala Ala Phe Gly Val Arg Leu Val Val Lys His Ala Arg Thr Val Phe
145 150 155 160
Arg Ala His Leu Arg Thr Val Phe Thr Val Gly Asn Gln Pro Ala Val
165 170 175
Phe Ala Ala Ala Arg Val Phe Ala Val Ala Ser Tyr Arg Ser Val Phe
180 185 190
Phe Ile Phe Ile Lys Asn Arg Leu Gly Gln Glu Cys Arg Asn Arg His
195 200 205
Ile Ala Arg Val Glu Ser Leu Leu Arg Ala Phe Glu Tyr Ala Ala Asp
210 215 220
Val Val Pro Phe Val Phe Lys Thr Lys Thr Arg Ala Glu Gln Pro Arg
225 230 235 240

Pro Ala Phe Val

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<210> 983
<211> 915
<212> DNA
<213> Neisseria meningitidis

<400> 983
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gacattgtcc cgaactgccg cgtaatagct ttaccgttg atgctgecg ggcgtcagtc 120
cgtataagta ttgttgccca agcggcagat ttgccccgta acgacatttc ccctgcctat 180
ggtgacccaa taggggctgg tttcactgcc gttggggctg attttttgc cgttgttttg 240
agggggcgtg ttgcacgaat aggccgggtt ggcattgtga taataataat cctgatggcg 300
gagatttagag ccaaaggcggt caaaccggag attcacgctc aggttgtggc ggattttggc 360
ggtatcgaag gatttttga atgcccctg caagagcctg tggcttccc cgtaaatcac 420
gcgatcggat ttgtaatagg aaaacggtt gtcggcactc gggcggcaat atttgtccga 480
accgtcggca gaacagtgcg tctgctaaa atgattatcc aaaccgatgc cctgcccgtc 540
gtaagagagg cggcataat ccgcccaga gtcttatcg gcattggat agacatattc 600
caaaccgtag cggcttttgg tgtgcgtctc gtcgtaaaac acgcccgtac cgtattccgc 660
gcccaccagc gcaccgttt cggccgttgg aaacagtccg ccgtatttgc gtttgcggc 720
gtatttgcgg ttaccggca aagaaccgcg ctgttttta tttgcataa aaaccgcctt 780
ggtcaggaaat gcccggaaaccg tcataatcgcc cgtgtcgaaa gtttgttgcg tgtgttgcag 840
tatggccggc atgttagtgcg gcttattctc aaaacgaaaa cccggggcggc acagccacgc 900
ccggctttcg tatga 915
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Arg Leu Gln Glu Pro Val Ala Phe Pro Val Asn His Ala Ile Gly Phe
130 135 140

Val Ile Gly Lys Arg Leu Val Gly Thr Arg Ala Ala Ile Phe Val Arg
145 150 155 160

Thr Val Gly Arg Thr Val Arg Leu Leu Lys Met Ile Ile Gln Thr Asp
165 170 175

Ala Leu Pro Val Val Arg Glu Ala Gly Ile Ile Arg Pro Ser Val Phe
180 185 190

Ile Gly Ile Gly Ile Asp Ile Phe Gln Thr Val Ala Ala Phe Gly Val
195 200 205

Arg Leu Val Val Lys His Ala Arg Thr Val Phe Arg Ala His Gln Arg
210 215 220

Thr Val Phe Ala Val Gly Lys Gln Ser Ala Val Phe Val Val Ala Arg
225 230 235 240

Val Phe Ala Val Thr Gly Gln Arg Thr Arg Leu Phe Phe Ile Cys Ile
245 250 255

Lys Asn Arg Leu Gly Gln Glu Cys Arg Asn Arg His Ile Ala Arg Val
260 265 270

Glu Ser Leu Leu Arg Val Phe Glu Tyr Ala Ala Asp Val Val Pro Leu
275 280 285

Ile Leu Lys Thr Lys Thr Arg Ala Glu Gln Pro Arg Pro Ala Phe Val
290 295 300

<210> 985
<211> 900
<212> DNA
<213> Neisseria meningitidis

<400> 985
atgcgtgctg cggtagtcgt agcgcaaccc cgccggaca tccgcccacc tgcccaaacg 60
gacattgtcc cgaactgccg cgtaatagct ttgcgttg atgctgcgcg gcgtgcagtc 120
cgtataagta ttgttgccca agcggcagat ttgccccgta accacatttc ccctgcctat 180
gctgacccaa tagggtttgt cttgccgccc gttgggttg gcgggttttag ggggcgttt 240
cgacgaatag ggcgcgttgg catgttgata ataataatcc tggatggcggg gatttagagtc 300
aaagcggtca aaaccggagat tcacgctcag gttgtggcgg attttggcgg tatcgaagga 360
tttttgaat gccgcctgca agaggctgtg gctttcccg taaaatcacgc ggtcgatgtt 420
gtagtaggaa aacggcttgtt cggcactcgg gcggcaatat ttgtccgaac cgtcggcaga 480
acagtgcgtc tgctgaaaat gattgtccaa accgatgccc tgccggcgt aagagaggcg 540
ggcataatcc acccaagtgt ctatccggc attggatag acatattcca aaccgttagcg 600
gctttgggtg tgcgtctcgt cgtaaaacac gcccgttaccg tattccgcgc ccaccagcgc 660
accgttttcg ccgttggtaa acagaccgccc gtattgtgg tgcggccgtt atttgccgtt 720
gcctcttatac ggtccgtatt ttctatatttc atcaaaaacc gccttggtca ggaatgcgg 780

aaccgtcata tcgcgcgtgt cgaaagtttggtgctgtgt tcgagtatgc cgccgatgta 840
gtgccgtttgtttcaaaac gaaaacccgg gcggAACAGC cacgatcgac tttcgatgtga 900

<210> 986

<211> 299

<212> PRT

<213> Neisseria meningitidis

<400> 986

Met Arg Ala Ala Val Val Val Ala Gln Pro Arg Ala Asp Ile Arg Pro
1 5 10 15

Pro Ala Gln Thr Asp Ile Val Pro Asn Cys Arg Val Ile Ala Phe Ala
20 25 30

Val Asp Ala Ala Arg Arg Ala Val Arg Ile Ser Ile Val Ala Gln Ala
35 40 45

Ala Asp Leu Pro Arg Asn His Ile Ser Pro Ala Tyr Ala Asp Pro Ile
50 55 60

Gly Leu Val Leu Ala Ala Val Gly Val Gly Gly Phe Arg Gly Arg Phe
65 70 75 80

Arg Arg Ile Gly Ala Val Gly Met Leu Ile Ile Ile Ile Leu Met Ala
85 90 95

Glu Ile Arg Val Lys Ala Val Lys Thr Glu Ile His Ala Gln Val Val
100 105 110

Ala Asp Phe Gly Gly Ile Glu Gly Phe Phe Glu Cys Arg Leu Gln Glu
115 120 125

Pro Val Ala Phe Pro Val Asn His Ala Val Gly Phe Val Val Gly Lys
130 135 140

Arg Leu Val Gly Thr Arg Ala Ala Ile Phe Val Arg Thr Val Gly Arg
145 150 155 160

Thr Val Arg Leu Leu Lys Met Ile Val Gln Thr Asp Ala Leu Pro Val
165 170 175

Val Arg Glu Ala Gly Ile Ile His Pro Ser Val Phe Ile Gly Ile Gly
180 185 190

Ile Asp Ile Phe Gln Thr Val Ala Ala Phe Gly Val Arg Leu Val Val
195 200 205

Lys His Ala Arg Thr Val Phe Arg Ala His Gln Arg Thr Val Phe Ala
210 215 220

Val Gly Lys Gln Thr Ala Val Phe Val Val Ala Arg Val Phe Ala Val
225 230 235 240

Ala Ser Tyr Arg Ser Val Phe Ser Ile Phe Ile Lys Asn Arg Leu Gly
245 250 255

Gln Glu Cys Arg Asn Arg His Ile Ala Arg Val Glu Ser Leu Leu Arg
260 265 270

Val Phe Glu Tyr Ala Ala Asp Val Val Pro Phe Val Phe Lys Thr Lys
275 280 285

Thr Arg Ala Glu Gln Pro Arg Ser Ala Phe Val
290 295

<210> 987

<211> 1194

<212> DNA

<213> Neisseria gonorrhoeae

<400> 987

atgatcgaca gggaccgtat gttgcgggac acgttggAAC gtgtgcgtgc ggggtcggttc 60
tggtatggg tgggtgtggc atcgatgatg tttaccgccc gattttcagg cacttatctt 120
ctgatggaca atcaggggct gaatttctt ttagtttgg cgggagtggtt gggcatgaat 180
acgctgtatgc tggcagtatg gttggcaacg ttgttccgtc gcgtgaaagt gggacggttt 240
ttcagcagtc cggcgtacgtg gttcggggc aaaggccctg taaatcagc ggtgttgcgg 300
ctgtatgcgg accagtggcg gcaaccttcg gtacgatgga aaataggcgc aacggcgcac 360
agcttgcggc tctgcacgtc gtcggaaatg ctgggtgtcggtt tattgtgtt gctttgggt 420
cgccaatata cggtcaactg gaaaaggcactg ctgttggca atgcccgttc ggtacgcgcg 480
gtggaaatgt tggcatggct gccgtcgaaa ctcgggttcc ctgtccccca tgccggggcg 540
gtcatcgaaatgcgtctgaa cggcaatatt gccgtacgtc gggcttggc gggctgtcg 600
gtcggcgtacgtc tcgtctgcta cggcatcctg ccgcgcctct tggcttgggtt agtgtgtaaa 660
atccctttga aaacaaggcga aaacggattt gatttggaaa aaacctatata tcaggcggtc 720
atccggccgt ggcagaacaa aatcaccgtat gccgtacgtc gtcggggaaac cgtgtccgc 780
gtttcgccga aaatcgatgtt gaacgtacgtc ccgaaatggg cgctcatgtt ggagaccgag 840
tggcaggacg gccaatgggtt cgagggcagg ctggcgcagg aatggctgaa taagggcggtt 900
gccgccaatc gggaaacaggt tgccgcgtc gagacagagc tgaaggcagaa accggcgcac 960
ctgcttatcg gcgtacgcgc ccaaactgtt ccggaccggc gcgtgtcg gcaagattgtt 1020
ccggcttcgg aagcggcgcac gggcggcgcg gtgggtgcagg ttttggcga acaggggctt 1080
tcagacgacc ttccggaaaa gctggaaatcg tggcgtaacg cgctgaccga atgcggcgcg 1140
gcgtggcttg agcctgacag ggtggcgcag gaaggccgtt tgaaagacca ataa 1194

<210> 988

<211> 397

<212> PRT

<213> Neisseria gonorrhoeae

<400> 988

Met Ile Asp Arg Asp Arg Met Leu Arg Asp Thr Leu Glu Arg Val Arg
1 5 10 15

Ala Gly Ser Phe Trp Leu Trp Val Val Val Ala Ser Met Met Phe Thr
20 25 30

Ala Gly Phe Ser Gly Thr Tyr Leu Leu Met Asp Asn Gln Gly Leu Asn
35 40 45

Phe Phe Leu Val Leu Ala Gly Val Leu Gly Met Asn Thr Leu Met Leu
50 55 60

Ala Val Trp Leu Ala Thr Leu Phe Leu Arg Val Lys Val Gly Arg Phe
65 70 75 80

Phe Ser Ser Pro Ala Thr Trp Phe Arg Gly Lys Gly Pro Val Asn Gln
85 90 95

Ala Val Leu Arg Leu Tyr Ala Asp Gln Trp Arg Gln Pro Ser Val Arg
100 105 110

Trp Lys Ile Gly Ala Thr Ala His Ser Leu Trp Leu Cys Thr Leu Leu
115 120 125

Gly Met Leu Val Ser Val Leu Leu Leu Leu Val Arg Gln Tyr Thr
130 135 140

Phe Asn Trp Glu Ser Thr Leu Leu Ser Asn Ala Ala Ser Val Arg Ala
145 150 155 160

Val Glu Met Leu Ala Trp Leu Pro Ser Lys Leu Gly Phe Pro Val Pro
165 170 175

Asp Ala Arg Ala Val Ile Glu Gly Arg Leu Asn Gly Asn Ile Ala Asp
180 185 190

Ala Arg Ala Trp Ser Gly Leu Leu Val Gly Ser Ile Val Cys Tyr Gly
195 200 205

Ile Leu Pro Arg Leu Leu Ala Trp Val Val Cys Lys Ile Leu Leu Lys
210 215 220

Thr Ser Glu Asn Gly Leu Asp Leu Glu Lys Thr Tyr Tyr Gln Ala Val
225 230 235 240

Ile Arg Arg Trp Gln Asn Lys Ile Thr Asp Ala Asp Thr Arg Arg Glu
245 250 255

Thr Val Ser Ala Val Ser Pro Lys Ile Val Leu Asn Asp Ala Pro Lys
260 265 270

Trp Ala Leu Met Leu Glu Thr Glu Trp Gln Asp Gly Gln Trp Phe Glu
275 280 285

Gly Arg Leu Ala Gln Glu Trp Leu Asp Lys Gly Val Ala Ala Asn Arg
290 295 300

Glu Gln Val Ala Ala Leu Glu Thr Glu Leu Lys Gln Lys Pro Ala Gln
305 310 315 320

Leu Leu Ile Gly Val Arg Ala Gln Thr Val Pro Asp Arg Gly Val Leu
325 330 335

Arg Gln Ile Val Arg Leu Ser Glu Ala Ala Gln Gly Gly Ala Val Val
340 345 350

Gln Leu Leu Ala Glu Gln Gly Leu Ser Asp Asp Leu Ser Glu Lys Leu
355 360 365

Glu His Trp Arg Asn Ala Leu Thr Glu Cys Gly Ala Ala Trp Leu Glu
370 375 380

Pro Asp Arg Val Ala Gln Glu Gly Arg Leu Lys Asp Gln
385 390 395

<210> 989
<211> 1194
<212> DNA
<213> Neisseria meningitidis

<400> 989
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tggTTgtggg tggTggcggc gacgtttgca ttttttacccg gtttttcagt cacttatctt 120
ctaattggaca atcagggtct gaatttctt ttggTTttgg cgggcgtgtt gggcatgaat 180
acgctgatgc tggcagttatg gttggcaatg ttgttccTgc gtgtgaaagt ggggcgtttt 240
ttcagcagtc cggcgaCgtg gttcggggc aaagaccctg taaatcaggc ggtgttgcgg 300
ctgtatgcgg acgagtggcg gcaaccTTcg gtacgttggA aaataggcgc aacgtcgac 360
agcctgtggc tctgcacgct gtcggAAatg ctggTgtcgg tattgttgc tCTTTggTg 420
cggaatata cgTTcaactg qgaaaggcAcg ctgttggac atgcggctt cgtacgcgcg 480
gtggaaatgt tggcatggct gcccgtgaaa ctcggTTcc ctgtccccga tgccggggcg 540
gtcatacgaa gccgctgtgaa cggcaatata gccgatgcgc gggcttggc ggggtcgctg 600
gtcggcagta tcgcctgcta cggcatcctg ccgcgcctgc tggcttgggt agtgtttaaa 660
atccTTTGA aaacaagcga aaacggattt gatttggaaa agccctattt tcaggcggc 720
atccggcgtt ggcagaacaa aatcaccgat gcgatACgc gtcgggaaac cgtgtccgcc 780
gtttcaccga aaatcatctt gaacgatgcg ccgaaatggg cggTcatgc ggagaccgag 840
tggcaggacg gcgaatgggtt cgagggcagg ctggcgcagg aatggctgga taaggcgTT 900
gccaccaatc gggAACAGGT tgccgcgtg gagacagagc tgaaggcagaa accggcgcAA 960
ctgcttatcg gcgtgcgcgc ccaaactgtg ccggaccgcg gcgtgttgcg gcagattgtc 1020
cgactctcg aagcggcgcA gggcggcgcg gtggTgcAgc tttggcggA acaggggctt 1080
tcagacgacc ttTcgaaaaa gctggAACat tggcgtaacg cgctggccgA atgcggcgcg 1140
gcgtggctt agcctgacag ggcggcgcag gaaggcgTT tggaaagacca ataa 1194

<210> 990
<211> 397
<212> PRT
<213> Neisseria meningitidis

<400> 990
Met Ile Asp Arg Asn Arg Met Leu Arg Glu Thr Leu Glu Arg Val Arg
1 5 10 15

Ala Gly Ser Phe Trp Leu Trp Val Val Ala Ala Thr Phe Ala Phe Phe
20 25 30

Thr Gly Phe Ser Val Thr Tyr Leu Leu Met Asp Asn Gln Gly Leu Asn
35 40 45

Phe Phe Leu Val Leu Ala Gly Val Leu Gly Met Asn Thr Leu Met Leu
50 55 60

Ala Val Trp Leu Ala Met Leu Phe Leu Arg Val Lys Val Gly Arg Phe
65 70 75 80

Phe Ser Ser Pro Ala Thr Trp Phe Arg Gly Lys Asp Pro Val Asn Gln
85 90 95

Ala Val Leu Arg Leu Tyr Ala Asp Glu Trp Arg Gln Pro Ser Val Arg
100 105 110

Trp Lys Ile Gly Ala Thr Ser His Ser Leu Trp Leu Cys Thr Leu Leu
115 120 125

Gly Met Leu Val Ser Val Leu Leu Leu Leu Val Arg Gln Tyr Thr
130 135 140

Phe Asn Trp Glu Ser Thr Leu Leu Ser Asn Ala Ala Ser Val Arg Ala
145 150 155 160

Val Glu Met Leu Ala Trp Leu Pro Ser Lys Leu Gly Phe Pro Val Pro
165 170 175

Asp Ala Arg Ala Val Ile Glu Gly Arg Leu Asn Gly Asn Ile Ala Asp
180 185 190

Ala Arg Ala Trp Ser Gly Leu Leu Val Gly Ser Ile Ala Cys Tyr Gly
195 200 205

Ile Leu Pro Arg Leu Leu Ala Trp Val Val Cys Lys Ile Leu Leu Lys
210 215 220

Thr Ser Glu Asn Gly Leu Asp Leu Glu Lys Pro Tyr Tyr Gin Ala Val
225 230 235 240

Ile Arg Arg Trp Gln Asn Lys Ile Thr Asp Ala Asp Thr Arg Arg Glu
245 250 255

Thr Val Ser Ala Val Ser Pro Lys Ile Ile Leu Asn Asp Ala Pro Lys
260 265 270

Trp Ala Val Met Leu Glu Thr Glu Trp Gln Asp Gly Glu Trp Phe Glu
275 280 285

Gly Arg Leu Ala Gln Glu Trp Leu Asp Lys Gly Val Ala Thr Asn Arg
290 295 300

Glu Gln Val Ala Ala Leu Glu Thr Glu Leu Lys Gln Lys Pro Ala Gln
305 310 315 320

Leu Leu Ile Gly Val Arg Ala Gln Thr Val Pro Asp Arg Gly Val Leu
325 330 335

Arg Gln Ile Val Arg Leu Ser Glu Ala Ala Gln Gly Gly Ala Val Val
340 345 350

Gln Leu Leu Ala Glu Gln Gly Leu Ser Asp Asp Leu Ser Glu Lys Leu
355 360 365

Glu His Trp Arg Asn Ala Leu Ala Glu Cys Gly Ala Ala Trp Leu Glu
370 375 380

Pro Asp Arg Ala Ala Gln Glu Gly Arg Leu Lys Asp Gln
385 390 395

<210> 991

<211> 1203

<212> DNA

<213> Neisseria meningitidis

<400> 991

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tggTTgtggg tggcggcggc gacgtttgcg ttttttaccg gtttttcagt tacttatctt 120
ctaattggaca atcagggtct gaatttctt ttggTTTgg cgggcgtgt gggcatgaat 180
acgctgatgc tggcagttatg gttggcaatg ttgttccTgc gcgtgaaagt ggggcgttt 240
ttcagcagtc cggcggacgtg gttcggggc aaagaccctg tcaatcaggc ggtgtgcgg 300
ctgtatgcgg acgagtggcg gcaaccTTcg gtacgttggA aaataggcgc aacgtcgac 360
agcctgtggc tctgcacgt ctgcggAAATg ctggTgtcgG tattgttgcg tctttggTg 420
cgccaatata cgTTcaactg gaaAGcACg ctgttggcg attcgtcttc ggtacggctg 480
gtggaaatgt tggcatggct gcctgcgaaa ctggTTTtc cctgcgttg tgcggggcg 540
gtcatacgaa gtcgtctgaa cggcaatatt gccgatgcgc gggcttggc gggctgtcg 600
gtcggcagta tcgcctgcta cggcatcctg ccgcgcctct tggcttggc ggtatgcAA 660
atccTTTGA aaacaAGcGA aaacggctt gatTTggAAA agccctatta tcaggcggc 720
atccggcgt ggcagaacaa aatcaccgat gcccatacgc gtcgggaaac cgtgtccgCC 780
gtttcgccga aaatcgTctt gaacgatgcg ccgaaatggg cggTcatgcg ggagaccgaa 840
tggcaggacg gcgaatggTt cgagggcagg ctggcgcagg aatggctggta aaggcgtt 900
gccGCCAAATC gggAACAGGT tgccgcgtg gagacagAGC tgaAGCAGAA accggcgcAA 960
ctgcttatcg gcgtgcgcgc ccaaactgtg cccgaccgcg gcgtgttgcg gcagatcgTC 1020
cgactttcgA aaggcgcgcA gggcggcgcg gtggTgcAGC tttggcggA acaggggctt 1080
tcagacgacc ttTcgaaaaa gctggAACat tggcgttaacg cgctgaccga atgcggcgcg 1140
cggtggctgg aaccggacag agcggcgcag gaaggcgtc tgaaaaccaa cgaccgcact 1200
tga 1203

<210> 992

<211> 400

<212> PRT

<213> Neisseria meningitidis

<400> 992

Met Ile Asp Arg Asn Arg Met Leu Arg Glu Thr Leu Glu Arg Val Arg
1 5 10 15

Ala Gly Ser Phe Trp Leu Trp Val Ala Ala Ala Thr Phe Ala Phe Phe
20 25 30

Thr Gly Phe Ser Val Thr Tyr Leu Leu Met Asp Asn Gln Gly Leu Asn
35 40 45

Phe Phe Leu Val Leu Ala Gly Val Leu Gly Met Asn Thr Leu Met Leu
50 55 60

Ala Val Trp Leu Ala Met Leu Phe Leu Arg Val Lys Val Gly Arg Phe
65 70 75 80

Phe Ser Ser Pro Ala Thr Trp Phe Arg Gly Lys Asp Pro Val Asn Gln
85 90 95

Ala Val Leu Arg Leu Tyr Ala Asp Glu Trp Arg Gln Pro Ser Val Arg
100 105 110

Trp Lys Ile Gly Ala Thr Ser His Ser Leu Trp Leu Cys Thr Leu Leu
115 120 125

Gly Met Leu Val Ser Val Leu Leu Leu Leu Val Arg Gln Tyr Thr
130 135 140

Phe Asn Trp Glu Ser Thr Leu Leu Gly Asp Ser Ser Ser Val Arg Leu
145 150 155 160

Val Glu Met Leu Ala Trp Leu Pro Ala Lys Leu Gly Phe Pro Val Pro
165 170 175

Asp Ala Arg Ala Val Ile Glu Gly Arg Leu Asn Gly Asn Ile Ala Asp
180 185 190

Ala Arg Ala Trp Ser Gly Leu Leu Val Gly Ser Ile Ala Cys Tyr Gly
195 200 205

Ile Leu Pro Arg Leu Leu Ala Trp Ala Val Cys Lys Ile Leu Leu Lys
210 215 220

Thr Ser Glu Asn Gly Leu Asp Leu Glu Lys Pro Tyr Tyr Gln Ala Val
225 230 235 240

Ile Arg Arg Trp Gln Asn Lys Ile Thr Asp Ala Asp Thr Arg Arg Glu
245 250 255

Thr Val Ser Ala Val Ser Pro Lys Ile Val Leu Asn Asp Ala Pro Lys
260 265 270

Trp Ala Val Met Leu Glu Thr Glu Trp Gln Asp Gly Glu Trp Phe Glu
275 280 285

Gly Arg Leu Ala Gln Glu Trp Leu Asp Lys Gly Val Ala Ala Asn Arg
290 295 300

Glu Gln Val Ala Ala Leu Glu Thr Glu Leu Lys Gln Lys Pro Ala Gln
305 310 315 320

Leu Leu Ile Gly Val Arg Ala Gln Thr Val Pro Asp Arg Gly Val Leu
325 330 335

Arg Gln Ile Val Arg Leu Ser Glu Ala Ala Gln Gly Gly Ala Val Val
340 345 350

Gln Leu Leu Ala Glu Gln Gly Leu Ser Asp Asp Leu Ser Glu Lys Leu
355 360 365

Glu His Trp Arg Asn Ala Leu Thr Glu Cys Gly Ala Ala Trp Leu Glu
370 375 380

Pro Asp Arg Ala Ala Gln Glu Gly Arg Leu Lys Thr Asn Asp Arg Thr
385 390 395 400

<210> 993
<211> 627
<212> DNA
<213> Neisseria gonorrhoeae

<400> 993
atgtatgcag gcgaacgctt caataacttac agccatttga gcggtttgat tctggcggcg 60
gcagggttga tgctgatgct gctgaaaacc ataggacacg gggacggata ccgtatcttc 120
agcgatcggtt acgttatcggtt cggcttctt ctgcttatt tgatccctc gctgtaccac 180
gaaattgcag ccggaaaact gaaaaggcatt ttgaaaaaaa ccgaccactg catgatttat 240
gtgctgattt ccggaagctt cacaccgttt gcactggttt ctttgagaaa cggccggc 300
tggacggat ttcaactgtc ctggctgctg gcggctgcag gaatgcaca agaactcacc 360
atcgacgga aaagcgaaaa acgtctgctg tctattgcga ttatatcgt aatgggctgg 420
atggtcttgg cggtaatgaa atccctgaca gcctcaactcc cgccggcagg actggcttgg 480
ctggcggcag gcggatgtt gtacagcgctc ggcatttaact gtttgtaaa cgatgaaaaa 540
atccgacacg ggcacggaat ctggcatctt ttcgtattgg gcggcagcat aacccaattt 600
gtcagcgtgt acggttatgt aatctga 627

<210> 994
<211> 208
<212> PRT
<213> Neisseria gonorrhoeae

<400> 994
Met Tyr Ala Gly Glu Arg Phe Asn Thr Tyr Ser His Leu Ser Gly Leu
1 5 10 15
Ile Leu Ala Ala Ala Gly Leu Met Leu Met Leu Leu Lys Thr Ile Gly
20 25 30
His Gly Asp Gly Tyr Arg Ile Phe Ser Val Ser Val Tyr Gly Ile Ser
35 40 45
Leu Leu Leu Leu Tyr Leu Ser Ser Ser Leu Tyr His Gly Ile Ala Ala
50 55 60
Gly Lys Leu Lys Ser Ile Leu Lys Lys Thr Asp His Cys Met Ile Tyr
65 70 75 80
Val Leu Ile Ala Gly Ser Tyr Thr Pro Phe Ala Leu Val Ser Leu Arg
85 90 95
Asn Gly Pro Gly Trp Thr Val Phe Ser Leu Ser Trp Leu Leu Ala Ala
100 105 110
Ala Gly Ile Ala Gln Glu Leu Thr Ile Gly Arg Lys Ser Glu Lys Arg
115 120 125
Leu Leu Ser Ile Ala Ile Tyr Ile Val Met Gly Trp Met Val Leu Ala
130 135 140

Val Met Lys Ser Leu Thr Ala Ser Leu Pro Pro Ala Gly Leu Ala Trp
145 150 155 160

Leu Ala Ala Gly Gly Met Leu Tyr Ser Val Gly Ile Tyr Trp Phe Val
165 170 175

Asn Asp Glu Lys Ile Arg His Gly His Gly Ile Trp His Leu Phe Val
180 185 190

Leu Gly Gly Ser Ile Thr Gln Phe Val Ser Val Tyr Gly Tyr Val Ile
195 200 205

<210> 995

<211> 504

<212> DNA

<213> Neisseria meningitidis

<400> 995

gtatcggtt acggcatcg ccttcttctg ctctatttgta gttcctggct gtaccacgga 60
attgcagccg gaaaactgaa aagcattttg aaaaaaaaccg accactgcat gatttatgtg 120
ctgattgccc gaagctacac accgtttgca ctggttctt tgagaaaacgg gccgggctgg 180
acggtatttt cactgtcctg gctgctggcg gctgcaggaa tcgcacaaga actcaccatc 240

ggacggaaaa gcgaaaaacg tctgctgtct attgtgattt atgtcgtcat gggttggatg 300
gtcttggcgg taatgaaatc cctgacagcc tcactccgt cggcaggact ggcttggctg 360
gccccaggcg gtatgtgta cagtgtcggc atttactggt ttgttaaacga tgaaaaaatc 420
cgacacgggc acggaatctg gcatctgttc gtattggcg gcagcatcac ccaatttgc 480
acgtgtacg gttacgtaat ctga 504

<210> 996

<211> 167

<212> PRT

<213> Neisseria meningitidis

<400> 996

Val Ser Val Tyr Gly Ile Ser Leu Leu Leu Tyr Leu Ser Ser Trp
1 5 10 15

Leu Tyr His Gly Ile Ala Ala Gly Lys Leu Lys Ser Ile Leu Lys Lys
20 25 30

Thr Asp His Cys Met Ile Tyr Val Leu Ile Ala Gly Ser Tyr Thr Pro
35 40 45

Phe Ala Leu Val Ser Leu Arg Asn Gly Pro Gly Trp Thr Val Phe Ser
50 55 60

Leu Ser Trp Leu Leu Ala Ala Gly Ile Ala Gln Glu Leu Thr Ile
65 70 75 80

Gly Arg Lys Ser Glu Lys Arg Leu Leu Ser Ile Val Ile Tyr Val Val

85	90	95
Met Gly Trp Met Val Leu Ala Val Met Lys Ser Leu Thr Ala Ser Leu		
100	105	110
Pro Ser Ala Gly Leu Ala Trp Leu Ala Ala Gly Gly Met Leu Tyr Ser		
115	120	125
Val Gly Ile Tyr Trp Phe Val Asn Asp Glu Lys Ile Arg His Gly His		
130	135	140
Gly Ile Trp His Leu Phe Val Leu Gly Gly Ser Ile Thr Gln Phe Val		
145	150	155
Ser Val Tyr Gly Tyr Val Ile		
165		

<210> 997
<211> 627
<212> DNA
<213> Neisseria meningitidis

<400> 997
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gcagggtttgg cgctgtatgtct gctgaaaacc ataggacacg gggacggcta ccgtatcttc 120
agcgtatcgg tttacggcat cagccttctt ctgctctatt tgagttccctc gctgtaccac 180
ggaatttgcag ccggaaaact gaaaaggcatt ttgaaaaaaaaa ccgaccactg catgatttat 240
gtgctgattt ccggaagcta cacaccgttt gcactggttt ctttgagaaa cggggcgggc 300
tgacggat tttcactgtc ctggctgtc gcggctgcag gaatcgcaca agaactcacc 360
atggacgga aaagcgaaaa acgactgtc tctattgcga tttatatcgt aatgggctgg 420
atggtcttgg cggtaatgaa atccctgaca gcctcaactcc cgccggcagg actggcttgg 480
ctggcggcag gcggatgtct gtacagcgtc ggcatattact gtttgtaaa cgatgaaaaa 540
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gtcagcgtgt acggttacgt aatctga 627

<210> 998
<211> 208
<212> PRT
<213> Neisseria meningitidis

<400> 998
Met Tyr Thr Gly Glu Arg Phe Asn Thr Tyr Ser His Leu Ser Gly Leu
1 5 10 15

Ile Leu Ala Ala Ala Gly Leu Ala Leu Met Leu Leu Lys Thr Ile Gly
20 25 30

His Gly Asp Gly Tyr Arg Ile Phe Ser Val Ser Val Tyr Gly Ile Ser
35 40 45

Leu Leu Leu Tyr Leu Ser Ser Ser Leu Tyr His Gly Ile Ala Ala
50 55 60

Gly Lys Leu Lys Ser Ile Leu Lys Lys Thr Asp His Cys Met Ile Tyr

65

70

75

80

Val Leu Ile Ala Gly Ser Tyr Thr Pro Phe Ala Leu Val Ser Leu Arg
 85 90 95

Asn Gly Pro Gly Trp Thr Val Phe Ser Leu Ser Trp Leu Leu Ala Ala
 100 105 110

Ala Gly Ile Ala Gln Glu Leu Thr Ile Gly Arg Lys Ser Glu Lys Arg
 115 120 125

Leu Leu Ser Ile Ala Ile Tyr Ile Val Met Gly Trp Met Val Leu Ala
 130 135 140

Val Met Lys Ser Leu Thr Ala Ser Leu Pro Pro Ala Gly Leu Ala Trp
 145 150 155 160

Leu Ala Ala Gly Gly Met Leu Tyr Ser Val Gly Ile Tyr Trp Phe Val
 165 170 175

Asn Asp Glu Lys Ile Arg His Gly His Gly Ile Trp His Leu Phe Val
 180 185 190

Leu Gly Gly Ser Ile Thr Gln Phe Val Ser Val Tyr Gly Tyr Val Ile
 195 200 205

<210> 999

<211> 567

<212> DNA

<213> Neisseria gonorrhoeae

<400> 999

atggttggac aggaagcctt gcggggtcag ttcgtcgccg tggtcgctgc cgcgttgcgt 60
 tacgctgtca aaacctgcgc cgatttccac gcctttgacg gcgttgatgc ccatcatcgc 120
 gttaggcatt tcggcatcga ggccgtcgaa aacgggttcg cccaaacccga cggggacgtt 180
 ggcggcttcg atatgcagtt tcgcgccgac ggaatccaag gatttgcgcg caccgtccat 240
 atagtgttcc agttcggcga ttggctttt gttggcggca aaaaaaggat tttggaaat 300
 gtgttcgctg cttcaaaacc ggattttttt ttgcggact tggtaacgt aggccgttat 360
 ttccgtgccc aatttttctt tcagccattt ttggcaacg gctccggccg caacgcgggc 420
 tgcggtttcg cgggcggAAC tcctgccc gccccggtag tcgcgcgtac cgtatTTGTG 480
 ccaatagta tagtcggcgt gtccggggcg gaaggcggtg gcatgtcgc cgtagtctc 540
 gctgcgtcgg tcggtgttgc ggattag 567

<210> 1000

<211> 188

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1000

Met Val Gly Gln Glu Ala Leu Arg Gly Gln Phe Val Ala Val Phe Ala
 1 5 10 15

Ala Ala Leu Arg Tyr Ala Val Lys Thr Cys Ala Asp Phe His Ala Phe
 20 25 30

 Asp Gly Val Asp Ala His His Arg Val Gly Asp Phe Gly Ile Glu Ala
 35 40 45

 Val Glu Asn Gly Phe Ala Gln Thr Asp Gly Asp Val Gly Gly Phe Asp
 50 55 60

 Met Gln Phe Arg Ala Asp Gly Ile Gln Gly Phe Ala His Thr Val His
 65 70 75 80

 Ile Val Phe Gln Phe Gly Asp Leu Ala Leu Val Gly Gly Lys Lys Arg
 85 90 95

 Ile Leu Gly Asn Val Phe Ala Ala Phe Lys Pro Asp Phe Phe Phe Ala
 100 105 110

 Asp Leu Gly Asn Val Gly Gly Asp Phe Arg Ala Glu Phe Phe Phe Gln
 115 120 125

 Pro Phe Phe Gly Asn Gly Ser Gly Gly Asn Ala Gly Cys Gly Phe Ala
 130 135 140

 Gly Gly Thr Pro Ala Ala Ala Pro Val Val Ala Arg Thr Val Phe Val
 145 150 155 160

 Pro Ile Gly Ile Val Gly Val Ser Gly Ala Glu Gly Gly Asp Val
 165 170 175

 Ala Val Val Phe Ala Ala Leu Val Gly Val Ala Asp
 180 185

<210> 1001
 <211> 567
 <212> DNA
 <213> Neisseria meningitidis

<400> 1001
 gtggttggac aggaagcctt gcggggtcag ttctgtcgccg tgttcgctgc cgcgttgcgt 60
 tacgctgtca aaacctgcgc cgatttccac gcctttgacg gcgttgatgc ccatcatcgc 120
 gtaggcgatt tcggcatcga ggcggtaaaa aacagggtcg cccaagccga cagggacatt 180
 ggctgcttcg atatgcagct tcgcgccgac ggaatccaag gatttgcgcg cgcgttccat 240
 atagtttcc agctcggcaa tttggctatg gttggcggca aaaaaaggat tttggaaat 300
 gtgttcgcag cttcaaaacc ggattttttt ttccggact tggtaacgt aggccgtgat 360
 ttccgtggcc aatttttctt tcaaccattt tttggcaacg gctccggcag caacgcggc 420
 ggcggtttca cggccggagc ttctgcccggcc gccgcggtag tcgcgcgtgc cgtatttgc 480
 ccaataggtt tagtcggcgt ggccggggcg gaagctggtg gcgatgttgc cgtagtcttt 540
 gctgcgcgtgg tcggatttgc ggattaa 567

<210> 1002
 <211> 188
 <212> PRT
 <213> Neisseria meningitidis

<400> 1002
Val Val Gly Gln Glu Ala Leu Arg Gly Gln Phe Val Ala Val Phe Ala
1 5 10 15

Ala Ala Leu Arg Tyr Ala Val Lys Thr Cys Ala Asp Phe His Ala Phe
20 25 30

Asp Gly Val Asp Ala His His Arg Val Gly Asp Phe Gly Ile Glu Ala
35 40 45

Val Lys Asn Arg Phe Ala Gln Ala Asp Arg Asp Ile Gly Cys Phe Asp
50 55 60

Met Gln Leu Arg Ala Asp Gly Ile Gln Gly Phe Ala His Ala Val His
65 70 75 80

Ile Val Phe Gln Leu Gly Asn Leu Ala Met Val Gly Gly Lys Lys Arg
85 90 95

Ile Leu Gly Asn Val Phe Ala Ala Phe Lys Pro Asp Phe Phe Ala
100 105 110

Asp Leu Gly Asn Val Gly Gly Asp Phe Arg Ala Glu Phe Phe Phe Gln
115 120 125

Pro Phe Phe Gly Asn Gly Ser Gly Ser Asn Ala Gly Gly Phe Thr
130 135 140

Gly Gly Ala Pro Ala Ala Ala Val Val Ala Arg Ala Val Phe Val
145 150 155 160

Pro Ile Gly Ile Val Gly Val Ala Gly Ala Glu Ala Gly Asp Val
165 170 175

Ala Val Val Phe Ala Ala Leu Val Gly Ile Ala Asp
180 185

<210> 1003
<211> 567
<212> DNA
<213> Neisseria meningitidis

<400> 1003
gtggttggac aggaagcctt gcggggtag ttcgtcgccg tgttcgctgc cgcgttgcgt 60
tacgctgtca aaacctgcgc cgatttccac gcctttgacg gcgttgatgc ccatcatggc 120
gtaggcgatt tcggcatcga ggcggctgaa tacgggttcg cccaagccga cggggacgtt 180
ggcggcttca atatgcagct togcgccgac ggaatccaag gatttgcgca cgctgtccat 240
atagtttcc agctcggcaa tttggctatg gttggcggca aaaaaaggat tttgggaaat 300
gtgttcgcag cttcaaaacc ggatttcttt ttgcggact tggtaacgt aggccgtgat 360
ttccgtcgcc aattttctt tcaaccattt tttggcaacg gctccggccg caacgcgggc 420
ggcggttcg cggcggaac tcctgccc gccccggtag tcgcgcgtgc cgtatgttg 480
ccaataggtta tagtcggcgt ggcggggcg gaagctggtg gcgtatgtgc cgtatgtttt 540
gctgcgtgg tcggattgc ggattaa 567

<210> 1004
<211> 188
<212> PRT
<213> Neisseria meningitidis

<400> 1004
Val Val Gly Gln Glu Ala Leu Arg Gly Glu Phe Val Ala Val Phe Ala
1 5 10 15

Ala Ala Leu Arg Tyr Ala Val Lys Thr Cys Ala Asp Phe His Ala Phe
20 25 30

Asp Gly Val Asp Ala His His Gly Val Gly Asp Phe Gly Ile Glu Ala
35 40 45

Val Glu Tyr Gly Phe Ala Gln Ala Asp Gly Asp Val Gly Gly Phe Asn
50 55 60

Met Gln Leu Arg Ala Asp Gly Ile Gln Gly Phe Ala His Ala Val His
65 70 75 80

Ile Val Phe Gln Leu Gly Asn Leu Ala Met Val Gly Gly Lys Lys Arg
85 90 95

Ile Leu Gly Asn Val Phe Ala Ala Phe Lys Pro Asp Phe Phe Ala
100 105 110

Asp Leu Gly Asn Val Gly Gly Asp Phe Arg Ala Glu Phe Phe Phe Gln
115 120 125

Pro Phe Phe Gly Asn Gly Ser Gly Asn Ala Gly Gly Phe Ala
130 135 140

Gly Gly Thr Pro Ala Ala Ala Pro Val Val Ala Arg Ala Val Phe Val
145 150 155 160

Pro Ile Gly Ile Val Gly Val Ala Gly Ala Glu Ala Gly Gly Asp Val
165 170 175

Ala Val Val Phe Ala Ala Leu Val Gly Ile Ala Asp
180 185

<210> 1005
<211> 720
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1005
atgctcgccg tacgcaatcg gggttggcac ggccgcagtcg tccatttccg cagctgcggc 60
ggcgttagcga acaccgcccc ggtgttctac cacttgggtg ataccgccga aatgcgcctt 120
gctttggaca cgctcaccgc gcgttaccgt gaaatatacg ccgtcggcgt atcgtcggc 180
ggcaacgcgc cggcaaaaata ttggggcgaa caggccaaaa aggccattgcc gcacgcctcg 240
gccgcgtat ccgccccgt tgatgcagag gcccgcaggca gcccgttgcg cagccgcattc 300
acgcggctgc tctacacgcg ctacttcctc cgcacactga tacccaaagc acgttcgttc 360
caaggtttc agacggcatt tgccgcagg tgcaaaaacac tgggcgagtt tgacgaccgt 420
ttcaccgcac cgctgcacgg ctttgcgcac cgccacact actaccgcac aacttcctgc 480

aaaccgctgc tcaaacacgt tgccaaacccg ctgctcctgc tcaatgccgc caacgacccc 540
ttcctgccgc ccgaagccct gccccgtgca gacgaagcggt ccgaagccgt taccctgttc 600
caacctgcac acggcgggca cggcggctt gtcagcagca cggcggcag gctgcacctg 660
caatggctgc cgcatggcttat tttgacagact tccgcacaaa caggcgtaa 720

<210> 1006

<211> 239

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1006

Met Leu Ala Val Arg Asn Arg Gly Trp His Gly Ala Val Val His Phe
1 5 10 15

Arg Ser Cys Gly Gly Val Ala Asn Thr Ala Pro Val Phe Tyr His Leu
20 25 30

Gly Asp Thr Ala Glu Ile Ala Phe Ala Leu Asp Thr Leu Thr Ala Arg
35 40 45

Tyr Arg Glu Ile Tyr Ala Val Gly Val Ser Leu Gly Gly Asn Ala Pro
50 55 60

Ala Lys Tyr Leu Gly Glu Gln Gly Lys Lys Ala Leu Pro His Ala Ser
65 70 75 80

Ala Ala Val Ser Ala Pro Val Asp Ala Glu Ala Ala Gly Ser Arg Phe
85 90 95

Asp Ser Gly Ile Thr Arg Leu Leu Tyr Thr Arg Tyr Phe Leu Arg Thr
100 105 110

Leu Ile Pro Lys Ala Arg Ser Leu Gln Gly Phe Gln Thr Ala Phe Ala
115 120 125

Ala Gly Cys Lys Thr Leu Gly Glu Phe Asp Asp Arg Phe Thr Ala Pro
130 135 140

Leu His Gly Phe Ala Asp Arg His Asp Tyr Tyr Arg Gln Thr Ser Cys
145 150 155 160

Lys Pro Leu Leu Lys His Val Ala Lys Pro Leu Leu Leu Leu Asn Ala
165 170 175

Ala Asn Asp Pro Phe Leu Pro Pro Glu Ala Leu Pro Arg Ala Asp Glu
180 185 190

Ala Ser Glu Ala Val Thr Leu Phe Gln Pro Ala His Gly Gly His Ala
195 200 205

Gly Phe Val Ser Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro
210 215 220

Gln Thr Val Leu Ser Tyr Phe Asp Ser Phe Arg Thr Asn Arg Arg
225 230 235

<210> 1007
<211> 719
<212> DNA
<213> Neisseria meningitidis

<400> 1007
atgcttcgg tacgcgtatcg gggttggcac ggcgttagtcg tccatttcgg cagctgcggc 60
ggcattgcca acaccgttcc ggtgttctac cacttggcga taccggcgaa atcgccctta 120
ctttggacac gttcgccgac cgttaccgtg aaataatacgc cgtcggcgta tcgctggcg 180
gcaacgcgct ggaaaatat ttgggcgaac agggcaaaaa ggcattgccc caagccgctg 240
ccgtcatctc cggccccgtc gatgcagagg cggcaggcag acgcttcgac agcggcatca 300
cgccggctgtct acacacgcgc tacttccctcc gcaccctgat acccaaagca aaatcgctcc 360
aagggtttca gacggcattt gccgcagggt gcaaaaacact gggcgagtt gacgaccgct 420
tcaccgcacc gctgcacggc tttgccgacc ggcacgacta ctaccggccaa acttcctgca 480
aaccgctgtct caaacacgtt gccaaaccgc tgctcctgct caatgccgtc aacgaccct 540
tcctggccgc cgaaggccctg ccccgccgac acgaagtatc cgaagccgtt accctgttcc 600
agccggcata tgggtgtcat gtcggctttt tcagcagcac cggcggcagg ctgcacctgc 660
aatggctgcc gcagaccgtc ctgtcctatt tcgacagctt ccgcacacaac aggcgtaa 719

<210> 1008
<211> 239
<212> PRT
<213> Neisseria meningitidis

<400> 1008
Met Leu Ala Val Arg Asp Arg Gly Trp His Gly Val Val Val His Phe
1 5 10 15

Arg Ser Cys Gly Gly Ile Ala Asn Thr Ala Pro Val Phe Tyr Xaa Leu
20 25 30

Gly Asp Thr Ala Glu Ile Ala Phe Thr Leu Asp Thr Phe Ala Ala Arg
35 40 45

Tyr Arg Glu Ile Tyr Ala Val Gly Val Ser Leu Gly Gly Asn Ala Leu
50 55 60

Ala Lys Tyr Leu Gly Glu Gln Gly Lys Lys Ala Leu Pro Gln Ala Ala
65 70 75 80

Ala Val Ile Ser Ala Pro Val Asp Ala Glu Ala Ala Gly Arg Arg Phe
85 90 95

Asp Ser Gly Ile Thr Arg Leu Leu Tyr Thr Arg Tyr Phe Leu Arg Thr
100 105 110

Leu Ile Pro Lys Ala Lys Ser Leu Gln Gly Phe Gln Thr Ala Phe Ala
115 120 125

Ala Gly Cys Lys Thr Leu Gly Glu Phe Asp Asp Arg Phe Thr Ala Pro
130 135 140

Leu His Gly Phe Ala Asp Arg His Asp Tyr Tyr Arg Gln Thr Ser Cys
145 150 155 160

Lys Pro Leu Leu Lys His Val Ala Lys Pro Leu Leu Leu Asn Ala
165 170 175

Val Asn Asp Pro Phe Leu Pro Pro Glu Ala Leu Pro Arg Ala Asp Glu
180 185 190

Val Ser Glu Ala Val Thr Leu Phe Gln Pro Ala Tyr Gly Gly His Val
195 200 205

Gly Phe Val Ser Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro
210 215 220

Gln Thr Val Leu Ser Tyr Phe Asp Ser Phe Arg Thr Asn Arg Arg
225 230 235

<210> 1009

<211> 720

<212> DNA

<213> Neisseria meningitidis

<400> 1009

atgctcgcg tacgcgatcg gggttgaaac ggcttagtcg tccatttcg cagctcgccg 60
ggcttagcga acaccgcccc ggtgttctac cacttggcg ataccgcccga aattgccttt 120
actttggaca cgctcgccgc gcgttaccgt gaaatatacg ccgtcggcgt atcgctggc 180
ggcaacgcgc tggcaaaata tttggcgaaa cagggcgaaa acgcgcgtgcc gcaagccgccc 240
gcgcgtcatct cgcacccgt cgatgcagag gcggcaggca accgcttca cagcggcatc 300
acacggctgc tctacacgcg ctacttcctc cgcacactga tacccaaagc acggtcgctc 360
caaggtttc agacggcatt tgccgcaggg tgcaaaacac tgggcgagtt tgacgaccgt 420
ttcacccgac acgtgcacgg ctttgccat cggcacgact actaccgcca aacttcctgc 480
aaaccgctgc tcaaacadgt tgccaaacccg ctgctcctgc tcaatgcccgt caacgacccc 540
ttcctgcccgc ccgaagcgt gccccgcgca gacgaagtgt ccgaagccgt taccctgttc 600
cagccgacac acggtgttca tgtcggcttt gtccgcagca ccggcggcag gctgcacctg 660
caatggttgc cgcagaccgt cctgtcctat ttgcacagct tccgcacaaa caggcgttaa 720

<210> 1010

<211> 239

<212> PRT

<213> Neisseria meningitidis

<400> 1010

Met Leu Ala Val Arg Asp Arg Gly Trp Asn Gly Val Val Val His Phe
1 5 10 15

Arg Ser Cys Gly Gly Val Ala Asn Thr Ala Pro Val Phe Tyr His Leu
20 25 30

Gly Asp Thr Ala Glu Ile Ala Phe Thr Leu Asp Thr Leu Ala Ala Arg
35 40 45

Tyr Arg Glu Ile Tyr Ala Val Gly Val Ser Leu Gly Gly Asn Ala Leu
50 55 60

Ala Lys Tyr Leu Gly Glu Gln Gly Glu Asn Ala Leu Pro Gln Ala Ala
65 70 75 80

Ala Val Ile Ser Ala Pro Val Asp Ala Glu Ala Ala Gly Asn Arg Phe
85 90 95

Asp Ser Gly Ile Thr Arg Leu Leu Tyr Thr Arg Tyr Phe Leu Arg Thr
100 105 110

Leu Ile Pro Lys Ala Arg Ser Leu Gln Gly Phe Gln Thr Ala Phe Ala
115 120 125

Ala Gly Cys Lys Thr Leu Gly Glu Phe Asp Asp Arg Phe Thr Ala Pro
130 135 140

Leu His Gly Phe Ala Asp Arg His Asp Tyr Tyr Arg Gln Thr Ser Cys
145 150 155 160

Lys Pro Leu Leu Lys His Val Ala Lys Pro Leu Leu Leu Leu Asn Ala
165 170 175

Val Asn Asp Pro Phe Leu Pro Pro Glu Ala Leu Pro Arg Ala Asp Glu
180 185 190

Val Ser Glu Ala Val Thr Leu Phe Gln Pro Thr His Gly Gly His Val
195 200 205

Gly Phe Val Gly Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro
210 215 220

Gln Thr Val Leu Ser Tyr Phe Asp Ser Phe Arg Thr Asn Arg Arg
225 230 235

<210> 1011

<211> 960

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1011

atgattttga caccggccgga cacggcccttt ttccctccgca acggcaatgc cgacacgatt 60
gccgc当地at tcctgc当地aca ccccgccaccc gc当地accgc gcgagatgt tccgc当地acgc 120
acgggtaaaa ccaaaccgc ctacgacttt tc当地caggcg gc当地ttcgcc cgatgc当地ccg 180
ctggtc当地gtgc tg当地ttcacgg tttggaaagg agcaggccgca gccattacgc ggtc当地aactg 240
atgctc当地cgcc tacgcaatcg ggggtggcac ggc当地cagtcg tccatccg cagctgc当地ggc 300
ggc当地tagcga acaccgcccc ggtgttctac cacttgggtg ataccgc当地ga aatgc当地cttt 360
gcttggaca cgctc当地accgc gc当地gttaccgt gaaatatacg cc当地gtccgctg atc当地gctggc 420
ggcaacgc当地gc cggcaaaaata tttgggc当地gaa caggc当地aaaaa aggccattgcc gcacgc当地ctcg 480
gccgc当地gtat cc当地gccccgt tgatgc当地agag gc当地ggcaggca gccgcttgc当地a cagc当地ggcatc 540
acgc当地ggctgc tctacacgc当地g ctacttccctc cgca当地actga tacccaaagc acgttgc当地gtc 600
caagg当地tttc agacggc当地att tgccgc当地agg tgca当地aaaacac tgggc当地gagtt tgacgaccgt 660
ttc当地accgc当地acgg cgtc当地gacgg ctttgc当地gc当地c cggc当地acgact actaccgc当地a aacttcc当地tgc 720
aaaccgc当地gtc tcaaaca当地cgt tgccaaaccg ctgctcc当地tgc tcaatgc当地ccgc caacgaccccc 780
ttc当地ctgccgc cc当地gaaggccct gccc当地gtgc当地a gacgaaggc当地gt cc当地gaaggccgt tacccctgttc 840
caacctgc当地ac cggc当地ggc当地a cggc当地ggc当地t gtca当地cagca cccggc当地ggc当地ag gctgc当地acctg 900
caatggc当地tgc cgc当地agaccgt cctgtc当地tat tttgacagct tccgc当地acaaa caggc当地gttaa 960

<210> 1012

<211> 319

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1012

Met Ile Leu Thr Pro Pro Asp Thr Pro Phe Phe Leu Arg Asn Gly Asn
1 5 10 15

Ala Asp Thr Ile Ala Ala Lys Phe Leu Gln His Pro Ala Pro Ala Tyr
20 25 30

Arg Arg Glu Met Leu Pro Asp Ser Thr Gly Lys Thr Lys Thr Ala Tyr
35 40 45

Asp Phe Ser Ala Gly Gly Ile Ser Pro Asp Ala Pro Leu Val Val Leu
50 55 60

Phe His Gly Leu Glu Gly Ser Ser Arg Ser His Tyr Ala Val Glu Leu
65 70 75 80

Met Leu Ala Val Arg Asn Arg Gly Trp His Gly Ala Val Val His Phe
85 90 95

Arg Ser Cys Gly Gly Val Ala Asn Thr Ala Pro Val Phe Tyr His Leu
100 105 110

Gly Asp Thr Ala Glu Ile Ala Phe Ala Leu Asp Thr Leu Thr Ala Arg
115 120 125

Tyr Arg Glu Ile Tyr Ala Val Gly Val Ser Leu Gly Gly Asn Ala Pro
130 135 140

Ala Lys Tyr Leu Gly Glu Gln Gly Lys Lys Ala Leu Pro His Ala Ser
145 150 155 160

Ala Ala Val Ser Ala Pro Val Asp Ala Glu Ala Ala Gly Ser Arg Phe
165 170 175

Asp Ser Gly Ile Thr Arg Leu Leu Tyr Thr Arg Tyr Phe Leu Arg Thr
180 185 190

Leu Ile Pro Lys Ala Arg Ser Leu Gln Gly Phe Gln Thr Ala Phe Ala
195 200 205

Ala Gly Cys Lys Thr Leu Gly Glu Phe Asp Asp Arg Phe Thr Ala Pro
210 215 220

Leu His Gly Phe Ala Asp Arg His Asp Tyr Tyr Arg Gln Thr Ser Cys
225 230 235 240

Lys Pro Leu Leu Lys His Val Ala Lys Pro Leu Leu Leu Leu Asn Ala
245 250 255

Ala Asn Asp Pro Phe Leu Pro Pro Glu Ala Leu Pro Arg Ala Asp Glu
260 265 270

Ala Ser Glu Ala Val Thr Leu Phe Gln Pro Ala His Gly Gly His Ala
275 280 285

Gly Phe Val Ser Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro
290 295 300

Gln Thr Val Leu Ser Tyr Phe Asp Ser Phe Arg Thr Asn Arg Arg
305 310 315

<210> 1013

<211> 957

<212> DNA

<213> Neisseria meningitidis

<400> 1013

atgatttaa caccggcga cacggccttt ttccctccgca acggcaatgc cgacacgatt 60
gccggccaaat tcctgcaacg cccccggccc gcataccgccc gagagctgtct tcccgacagc 120
acgggtaaaa ccaaagtgcgc ctacgacttt tcagacggca ttccggccgca tgccggcgctg 180
gtcgtgtgtt ttccacgggtt ggaaggaaagc agccgcagcc attacgcggcgt cgaactgatg 240
cttgcggtagc gcgatcgaaaa ttggcacggc gtatgcgtcc atttccgcag ctgcggcgcc 300
attgccaaca ccgcgtccgt gttctaccac ttgggcgata ccggccgaaat cgcctttact 360
ttggacacgt tcgcccgcgc ttaccgtgaa atatacgccg tcggcgtatc gctgggcggc 420
aacgcgctgg caaaaatattt gggcgaacag ggcaaaaagg cattgcccga agccgcgtgcc 480
gtcatctccg ccccccgtcga tgcagaggcg gcaggcagac gtttcgacag cggcatcagc 540
cggctgtctt acacgcgtca ctccctccgc accctgatac ccaaagcaaa atcgctccaa 600
ggtttcaga cggcatttgc cgcagggtgc aaaacactgg gcgagtttgaa cgaccgcgttc 660
accgcaccgc tgcacggtt tggccgaccgg cacgactact accgcacaaac ttccctgcaaa 720
ccgctgtca aacacgttgc caaaaccgctg ctccctgctca atgcccgtcaa cgaccgccttc 780
ctgcccggccg aagccctgccc cccgcgcagac gaagtatccg aagccgttac cctgttccag 840
ccggcatatg gtggtcatgt cggctttgtc agcagcacccg gcggcagggct gcacactgca 900
tggctgcccgc agaccgtcct gtccttatttc gacagcttcc gcacaaaacag gcgttaa 957

<210> 1014

<211> 318

<212> PRT

<213> Neisseria meningitidis

<400> 1014

Met Ile Leu Thr Pro Pro Asp Thr Pro Phe Phe Leu Arg Asn Gly Asn
1 5 10 15

Ala Asp Thr Ile Ala Ala Lys Phe Leu Gln Arg Pro Ala Pro Ala Tyr
20 25 30

Arg Arg Glu Leu Leu Pro Asp Ser Thr Gly Lys Thr Lys Val Ala Tyr
35 40 45

Asp Phe Ser Asp Gly Ile Ser Pro Asp Ala Pro Leu Val Val Leu Phe
50 55 60

His Gly Leu Glu Gly Ser Ser Arg Ser His Tyr Ala Val Glu Leu Met
65 70 75 80

Leu Ala Val Arg Asp Arg Gly Trp His Gly Val Val Val His Phe Arg
85 90 95

Ser Cys Gly Gly Ile Ala Asn Thr Ala Pro Val Phe Tyr His Leu Gly
 100 105 110

 Asp Thr Ala Glu Ile Ala Phe Thr Leu Asp Thr Phe Ala Ala Arg Tyr
 115 120 125

 Arg Glu Ile Tyr Ala Val Gly Val Ser Leu Gly Gly Asn Ala Leu Ala
 130 135 140

 Lys Tyr Leu Gly Glu Gln Gly Lys Lys Ala Leu Pro Gln Ala Ala Ala
 145 150 155 160

 Val Ile Ser Ala Pro Val Asp Ala Glu Ala Ala Gly Arg Arg Phe Asp
 165 170 175

 Ser Gly Ile Thr Arg Leu Leu Tyr Thr Arg Tyr Phe Leu Arg Thr Leu
 180 185 190

 Ile Pro Lys Ala Lys Ser Leu Gln Gly Phe Gln Thr Ala Phe Ala Ala
 195 200 205

 Gly Cys Lys Thr Leu Gly Glu Phe Asp Asp Arg Phe Thr Ala Pro Leu
 210 215 220

 His Gly Phe Ala Asp Arg His Asp Tyr Tyr Arg Gln Thr Ser Cys Lys
 225 230 235 240

 Pro Leu Leu Lys His Val Ala Lys Pro Leu Leu Leu Leu Asn Ala Val
 245 250 255

 Asn Asp Pro Phe Leu Pro Pro Glu Ala Leu Pro Arg Ala Asp Glu Val
 260 265 270

 Ser Glu Ala Val Thr Leu Phe Gln Pro Ala Tyr Gly Gly His Val Gly
 275 280 285

 Phe Val Ser Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro Gln
 290 295 300

 Thr Val Leu Ser Tyr Phe Asp Ser Phe Arg Thr Asn Arg Arg
 305 310 315

<210> 1015
 <211> 957
 <212> DNA
 <213> Neisseria meningitidis

<400> 1015
 atgatttga caccgccgga cacacccttt ttcctccgca acggcaatgc cgacacgatt 60
 gccgc当地at tcctgcaacg ctccgcaccc gcataccgccc gcgagctgtctccgacaggc 120
 acgggtaaaa ccaaaaccgc ctacgacttt tcagacggca tttcgccccga tgccggcgtg 180
 gtcgtgttgt ttcacgttt ggagggcggc agtggcagcc attacgcggc cgaactgtatg 240
 ctcgcggta cgcgtatcgaaa ttggAACGGC gtatgtgtcc atttccgcag ctgcggcggc 300
 gtagcgaaca ccggccccgt gttctaccac ttggggata ccggccaaat tgcctttact 360
 ttggacacgc tcgcccgcg ttaccgtgaa atatacgcggc tcggcgtatc gctggcggc 420

aacgcgctgg caaaatattt gggcgaacag ggcgaaaacg cgctgccgca agccgccccc 480
gtcatctccg caccgcgtcg tgcagaggcg gcaggcaacc gcttcgacag cgccatcaca 540
cggtctgtct acacgcgtca cttcctccgc acactgatac ccaaagcacg gtcgctccaa 600
ggtttcaga cggcatttgc cgcaagggtgc aaaacactgg gcgagttga cgaccgtttc 660
accgcaccgc tgcacgctt tgccgatcg cacgactact accgccaac ttccgtcaaa 720
ccgctgctca aacacgttgc caaaccgctg ctcctgctca atgcccgtcaa cgacccttc 780
ctgcccggcc aagcgctgcc ccgcgcagac gaagtgtccg aagccgttac cctgttccag 840
ccgacacacg gtggtcatgt cggcttgc ggcagcaccc gcggcaggct gcacctgcaa 900
tggttgccgc agaccgtcct gtcctatttc gacagcttcc gcacaaacag gcgtaa 957

<210> 1016

<211> 318

<212> PRT

<213> Neisseria meningitidis

<400> 1016

Met Ile Leu Thr Pro Pro Asp Thr Pro Phe Phe Leu Arg Asn Gly Asn
1 5 10 15

Ala Asp Thr Ile Ala Ala Lys Phe Leu Gln Arg Ser Ala Pro Ala Tyr
20 25 30

Arg Arg Glu Leu Leu Pro Asp Ser Thr Gly Lys Thr Lys Thr Ala Tyr
35 40 45

Asp Phe Ser Asp Gly Ile Ser Pro Asp Ala Pro Leu Val Val Leu Phe
50 55 60

His Gly Leu Glu Gly Gly Ser Gly Ser His Tyr Ala Val Glu Leu Met
65 70 75 80

Leu Ala Val Arg Asp Arg Gly Trp Asn Gly Val Val Val His Phe Arg
85 90 95

Ser Cys Gly Gly Val Ala Asn Thr Ala Pro Val Phe Tyr His Leu Gly
100 105 110

Asp Thr Ala Glu Ile Ala Phe Thr Leu Asp Thr Leu Ala Ala Arg Tyr
115 120 125

Arg Glu Ile Tyr Ala Val Gly Val Ser Leu Gly Gly Asn Ala Leu Ala
130 135 140

Lys Tyr Leu Gly Glu Gln Gly Glu Asn Ala Leu Pro Gln Ala Ala Ala
145 150 155 160

Val Ile Ser Ala Pro Val Asp Ala Glu Ala Ala Gly Asn Arg Phe Asp
165 170 175

Ser Gly Ile Thr Arg Leu Leu Tyr Thr Arg Tyr Phe Leu Arg Thr Leu
180 185 190

Ile Pro Lys Ala Arg Ser Leu Gln Gly Phe Gln Thr Ala Phe Ala Ala
195 200 205

Gly Cys Lys Thr Leu Gly Glu Phe Asp Asp Arg Phe Thr Ala Pro Leu

210

215

220

His Gly Phe Ala Asp Arg His Asp Tyr Tyr Arg Gln Thr Ser Cys Lys
225 230 235 240

Pro Leu Leu Lys His Val Ala Lys Pro Leu Leu Leu Leu Asn Ala Val
245 250 255

Asn Asp Pro Phe Leu Pro Pro Glu Ala Leu Pro Arg Ala Asp Glu Val
260 265 270

Ser Glu Ala Val Thr Leu Phe Gln Pro Thr His Gly Gly His Val Gly
275 280 285

Phe Val Gly Ser Thr Gly Gly Arg Leu His Leu Gln Trp Leu Pro Gln
290 295 300

Thr	Val	Leu	Ser	Tyr	Phe	Asp	Ser	Phe	Arg	Thr	Asn	Arg	Arg
305					310						315		

<210> 1017

<211> 381

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1017

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ctgcgcctgt tcggcgtgga cgacagacag gcccggatt tggtaataa ggttttggcg 240
gaagtggcgc gtttggaaaa aatgttcagc ctttaccgtg aagacagcct gatcagccgt 300
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gccgcgatat tcacgcgctg a 381

<210> 1018

<211> 126

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1018

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Ala Val Ala Gly Ala Ala Val Ser Phe Leu Pro Asn Pro Phe Ala Ala
20 25 30

Gly Gly Glu Lys Arg Asn Met Asp Lys Lys Arg Asp Glu Asn Val Phe
35 40 45

Phe Trp Lys Gly Val Ala Leu Gly Ser Gly Ala Glu Leu Arg Leu Phe
 50 55 60

Gly Val Asp Asp Arg Gln Ala Ala Asp Leu Val Asn Lys Val Leu Ala
 65 70 75 80

Glu Val Ala Arg Leu Glu Lys Met Phe Ser Leu Tyr Arg Glu Asp Ser
85 90 95

Leu Ile Ser Arg Leu Asn Arg Asp Gly Tyr Leu Thr Ser Pro Pro Ala
100 105 110

Asp Phe Leu Glu Leu Leu Ser Leu Ala Ala Ile Phe Thr Arg
115 120 125

<210> 1019

<211> 378

<212> DNA

<213> Neisseria meningitidis

<400> 1019

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gtggcgcgtt tggaaaaatt gttcagcctt taccgtgaag acagcctgtat cagccgcctg 300
aacagggacg gttatctgac ttccgcgtcg gcggattttt tggactgkt gagcctggcc 360
gcgatattca cgckctga 378

<210> 1020

<211> 126

<212> PRT

<213> Neisseria meningitidis

<400> 1020

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Ala Ala Gly Xaa Ala Ala Val Ser Phe Leu Pro Asn Pro Phe Ala Ala
20 25 30

Asp Asp Glu Lys Arg Asn Gly Asp Glu Lys Arg Asn Glu Asn Val Phe
35 40 45

Phe Trp Lys Gly Val Ala Leu Gly Ser Gly Ala Xaa Leu Arg Leu Phe
50 55 60

Gly Val Asp Asp Arg Arg Ala Ala Asp Leu Val Asn Lys Val Leu Ala
65 70 75 80

Glu Val Ala Arg Leu Glu Lys Leu Phe Ser Leu Tyr Arg Glu Asp Ser
85 90 95

Leu Ile Ser Arg Leu Asn Arg Asp Gly Tyr Leu Thr Ser Pro Ser Ala
100 105 110

Asp Phe Leu Glu Leu Xaa Ser Leu Ala Ala Ile Phe Thr Xaa
115 120 125

<210> 1021

<211> 381
<212> DNA
<213> Neisseria meningitidis

<400> 1021

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aaaaaacgca ataaaaatgt gttttctgg aaagggtgtcg cactgggttc cggtgcggag 180
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gaagtggcgc gtttgaaaa aatgttcagc cttaaccgtg aagacagocg gatcagccgt 300
ctgaaccgtg acggttattt gacttcgccc ccggcggtt ttttggact gttgagccgt 360
cccgatata tcacgcgtg a 381

<210> 1022
<211> 126
<212> PRT
<213> Neisseria meningitidis

<400> 1022

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1 5 10 15

Ala Ala Ala Gly Ala Ala Val Ser Phe Leu Pro Asn Pro Phe Ala Ala
20 25 30

Asp Asp Glu Lys Arg Asn Lys Asp Glu Lys Arg Asn Glu Asn Val Phe
35 40 45

Phe Trp Lys Gly Val Ala Leu Gly Ser Gly Ala Glu Leu Arg Leu Phe
50 55 60

Gly Val Asp Asp Arg Arg Ala Ala Asp Leu Val Asn Lys Val Leu Ala
65 70 75 80

Glu Val Ala Arg Leu Glu Lys Met Phe Ser Leu Tyr Arg Glu Asp Ser
85 90 95

Leu Ile Ser Arg Leu Asn Arg Asp Gly Tyr Leu Thr Ser Pro Pro Ala
100 105 110

Asp Phe Leu Glu Leu Leu Ser Leu Ala Val Ile Phe Thr Arg
115 120 125

<210> 1023
<211> 1203
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1023

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gacaggcgca acggcggtt cgttcgacg attgccaac gcctttccgg gatgttcacg 240
ctggtcgccc tactgcccgg ctgttccgtt ttccggatcc cccgcgtt tatcaacggc 300

acgattaatt cgtggttcg caacgacacc cacgaagccc tcgaacgcag ccttaattt 360
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taa 1203

<210> 1024

<211> 400

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1024

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Tyr Gly Leu Thr Ala Ala Thr Gly Ser Thr Ser Ser Leu Ala Asp Tyr
20 25 30

Phe Trp Trp Ile Val Ser Phe Ser Ala Met Leu Leu Leu Val Leu Ser
35 40 45

Ala Val Leu Ala Arg Tyr Val Ile Leu Leu Leu Lys Asp Arg Arg Asn
50 55 60

Gly Val Phe Gly Ser Gln Ile Ala Lys Arg Leu Ser Gly Met Phe Thr
65 70 75 80

Leu Val Ala Val Leu Pro Gly Leu Phe Leu Phe Gly Ile Ser Ala Gln
85 90 95

Phe Ile Asn Gly Thr Ile Asn Ser Trp Phe Gly Asn Asp Thr His Glu
100 105 110

Ala Leu Glu Arg Ser Leu Asn Leu Ser Lys Ser Ala Leu Asp Leu Ala
115 120 125

Ala Asp Asn Ala Val Ser Asn Ala Val Pro Val Gln Ile Asp Leu Ile
130 135 140

Gly Thr Ala Ser Leu Ser Gly Asn Met Gly Ser Val Leu Glu His Tyr
145 150 155 160

Ala Gly Ser Gly Phe Ala Gln Leu Ala Leu Tyr Asn Ala Ala Ser Gly
165 170 175

Lys Ile Glu Lys Ser Ile Asn Pro His Gln Phe Asp Gln Pro Leu Pro
 180 185 190
 Asp Lys Glu His Trp Glu Gln Ile Gln Gln Thr Gly Ser Val Arg Ser
 195 200 205
 Leu Glu Ser Ile Gly Gly Val Leu Tyr Ala Gln Gly Trp Leu Ser Ala
 210 215 220
 Gly Thr His Asn Gly Arg Asp Tyr Ala Leu Phe Phe Arg Gln Pro Ile
 225 230 235 240
 Pro Glu Asn Val Ala Gln Asp Ala Val Leu Ile Glu Lys Ala Arg Ala
 245 250 255
 Lys Tyr Ala Glu Leu Ser Tyr Ser Lys Lys Gly Leu Gln Thr Phe Phe
 260 265 270
 Leu Val Thr Leu Leu Ile Ala Ser Leu Leu Ser Ile Phe Leu Ala Leu
 275 280 285
 Val Met Ala Leu Tyr Phe Ala Arg Arg Phe Val Glu Pro Ile Leu Ser
 290 295 300
 Leu Ala Glu Gly Ala Lys Ala Val Ala Gln Gly Asp Phe Ser Gln Thr
 305 310 315 320
 Arg Pro Val Leu Arg Asn Asp Glu Phe Gly Arg Leu Thr Lys Leu Phe
 325 330 335
 Asn His Met Thr Glu Gln Leu Ser Ile Ala Lys Glu Ala Asp Glu Arg
 340 345 350
 Asn Arg Arg Arg Glu Glu Ala Ala Arg His Tyr Leu Glu Cys Val Leu
 355 360 365
 Asp Gly Leu Thr Thr Gly Val Val Val Ser Tyr Pro Leu Ser Cys Cys
 370 375 380
 Arg Thr Ala Val Phe Ser Thr Cys His Ser Ser Pro Leu Ser Tyr Phe
 385 390 395 400

<210> 1025
 <211> 1767
 <212> DNA
 <213> Neisseria meningitidis

<400> 1025
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<210> 1026

<211> 588

<212> PRT

<213> Neisseria meningitidis

<400> 1026

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Phe	Trp	Trp	Ile	Val	Ala	Phe	Ser	Ala	Met	Leu	Leu	Leu	Val	Leu	Ser
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Ala	Val	Leu	Ala	Arg	Tyr	Val	Ile	Leu	Leu	Lys	Asp	Arg	Arg	Asp
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Gly	Val	Phe	Gly	Ser	Gln	Ile	Ala	Lys	Arg	Leu	Ser	Gly	Met	Phe	Thr
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Leu	Val	Ala	Val	Leu	Pro	Gly	Val	Phe	Leu	Phe	Gly	Val	Ser	Ala	Gln
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Phe	Ile	Asn	Gly	Thr	Ile	Asn	Ser	Trp	Phe	Gly	Asn	Asp	Thr	His	Glu
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Ala	Leu	Glu	Arg	Ser	Leu	Asn	Leu	Ser	Lys	Ser	Ala	Leu	Asn	Leu	Ala
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Ala Asp Asn Ala Leu Gly Asn Ala Val Pro Val Gln Ile Asp Leu Ile
130 135 140

Gly Ala Ala Ser Leu Pro Gly Asp Met Gly Arg Val Leu Glu His Tyr
145 150 155 160

Ala Gly Ser Gly Phe Ala Gln Leu Ala Leu Tyr Asn Ala Ala Ser Gly
165 170 175

Lys Ile Glu Lys Ser Ile Asn Pro His Lys Leu Asp Gln Pro Phe Pro
180 185 190

Gly Lys Ala Arg Trp Glu Lys Ile Gln Arg Ala Gly Ser Val Arg Asp
195 200 205

Leu Glu Ser Ile Gly Gly Val Leu Tyr Ala Gln Gly Trp Leu Ser Ala
210 215 220

Gly Thr His Asn Gly Arg Asp Tyr Ala Leu Phe Phe Arg Gln Pro Val
225 230 235 240

Pro Lys Gly Val Ala Glu Asp Ala Val Leu Ile Glu Lys Ala Arg Ala
245 250 255

Lys Tyr Ala Glu Leu Ser Tyr Ser Lys Lys Gly Leu Gln Thr Phe Phe
260 265 270

Leu Ala Thr Leu Leu Ile Ala Ser Leu Leu Ser Ile Phe Leu Ala Leu
275 280 285

Val Met Ala Leu Tyr Phe Ala Arg Arg Phe Val Glu Pro Val Leu Ser
290 295 300

Leu Ala Glu Gly Ala Lys Ala Val Ala Gln Gly Asp Phe Ser Gln Thr
305 310 315 320

Arg Pro Val Leu Arg Asn Asp Glu Phe Gly Arg Leu Thr Lys Leu Phe
325 330 335

Asn His Met Thr Glu Gln Leu Ser Ile Ala Lys Glu Ala Asp Glu Arg
340 345 350

Asn Arg Arg Arg Glu Glu Ala Ala Arg His Tyr Leu Glu Cys Val Leu
355 360 365

Glu Gly Leu Thr Thr Gly Val Val Val Phe Asp Glu Gln Gly Cys Leu
370 375 380

Lys Thr Phe Asn Lys Ala Ala Glu Gln Ile Leu Gly Met Pro Leu Thr
385 390 395 400

Pro Leu Trp Gly Ser Ser Arg His Gly Trp His Gly Val Ser Ala Gln
405 410 415

Gln Ser Leu Leu Ala Glu Val Phe Ala Ala Ile Gly Ala Ala Ala Gly
420 425 430

Thr	Asp	Lys	Pro	Val	His	Val	Lys	Tyr	Ala	Ala	Pro	Asp	Asp	Ala	Lys
435							440							445	
Ile	Leu	Leu	Gly	Lys	Ala	Thr	Val	Leu	Pro	Glu	Asp	Asn	Gly	Asn	Gly
450							455							460	
Val	Val	Met	Val	Ile	Asp	Asp	Ile	Thr	Val	Leu	Ile	His	Ala	Gln	Lys
465							470							475	
Glu	Ala	Ala	Trp	Gly	Glu	Val	Ala	Lys	Arg	Leu	Ala	His	Glu	Ile	Arg
485								490						495	
Asn	Pro	Leu	Thr	Pro	Ile	Gln	Leu	Ser	Ala	Glu	Arg	Xaa	Ala	Xaa	Lys
500								505						510	
Leu	Gly	Gly	Lys	Leu	Asp	Glu	Gln	Asp	Ala	Gln	Ile	Leu	Thr	Arg	Ser
515								520						525	
Thr	Asp	Thr	Ile	Val	Lys	Gln	Val	Ala	Ala	Leu	Lys	Glu	Met	Val	Glu
530							535							540	
Ala	Phe	Arg	Asn	Tyr	Ala	Arg	Ser	Pro	Ser	Leu	Lys	Leu	Glu	Asn	Gln
545							550							555	
Asp	Leu	Asn	Ala	Leu	Ile	Gly	Asp	Val	Leu	Ala	Leu	Tyr	Glu	Ala	Gly
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Pro	Cys	Arg	Phe	Ala	Ala	Asp	Leu	Pro	Ala	Asn	Arg				
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<210> 1027
<211> 2121
<212> DNA
<213> Neisseria meningitidis

<400> 1027

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<210> 1028

<211> 706

<212> PRT

<213> Neisseria meningitidis

<400> 1028

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 35 40 45

Ala Val Leu Ala Arg Tyr Val Ile Leu Leu Leu Lys Asp Arg Arg Asp
50 55 60

Gly Val Phe Gly Ser Gln Ile Ala Lys Arg Leu Ser Gly Met Phe Thr
65 70 75 80

Leu Val Ala Val Leu Pro Gly Val Phe Leu Phe Gly Val Ser Ala Gln
 85 90 95

Phe Ile Asn Gly Thr Ile Asn Ser Trp Phe Gly Asn Asp Thr His Glu
 100 105 . 110

Ala Leu Glu Arg Ser Leu Asn Leu Ser Lys Ser Ala Leu Asn Leu Ala
 115 120 125

Ala Asp Asn Ala Leu Gly Asn Ala Ile Pro Val Gln Ile Asp Leu Ile
130 135 140

Gly Ala Ala Ser Leu Pro Gly Asp Met Gly Arg Val Leu Glu His Tyr
 145 150 155 160

Ala Gly Ser Gly Phe Ala Gln Leu Ala Leu Tyr Asn Ala Ala Ser Gly
165 170 175

Lys Ile Glu Lys Ser Ile Asn Pro His Lys Leu Asp Gln Pro Phe Pro
180 185 190

Gly Lys Ala Arg Trp Glu Lys Ile Gln Gln Ala Gly Ser Val Arg Asp
195 200 205

Leu Glu Ser Ile Gly Gly Val Leu Tyr Ala Gln Gly Trp Leu Ser Ala
210 215 220

Gly Thr His Asn Gly Arg Asp Tyr Ala Leu Phe Phe Arg Gln Pro Val
225 230 235 240

Pro Lys Gly Val Ala Glu Asp Ala Val Leu Ile Glu Lys Ala Arg Ala
245 250 255

Lys Tyr Ala Glu Leu Ser Tyr Ser Lys Lys Gly Leu Gln Thr Phe Phe
260 265 270

Leu Ala Thr Leu Leu Ile Ala Ser Leu Leu Ser Ile Phe Leu Ala Leu
275 280 285

Val Met Ala Leu Tyr Phe Ala Arg Arg Phe Val Glu Pro Val Leu Ser
290 295 300

Leu Ala Glu Gly Ala Lys Ala Val Ala Gln Gly Asp Phe Ser Gln Thr
305 310 315 320

Arg Pro Val Leu Arg Asn Asp Glu Phe Gly Arg Leu Thr Lys Leu Phe
325 330 335

Asn His Met Thr Glu Gln Leu Ser Ile Ala Lys Glu Ala Asp Glu Arg
340 345 350

Asn Arg Arg Arg Glu Glu Ala Ala Arg His Tyr Leu Glu Cys Val Leu
355 360 365

Glu Gly Leu Thr Thr Gly Val Val Val Phe Asp Glu Gln Gly Cys Leu
370 375 380

Lys Thr Phe Asn Lys Ala Ala Glu Gln Ile Leu Gly Met Pro Leu Thr
385 390 395 400

Pro Leu Trp Gly Ser Ser Arg His Gly Trp His Gly Val Ser Ala Gln
405 410 415

Gln Ser Leu Leu Ala Glu Val Phe Ala Ala Ile Gly Ala Ala Ala Gly
420 425 430

Thr Asp Lys Pro Val His Val Lys Tyr Ala Ala Pro Asp Asp Ala Lys
435 440 445

Ile Leu Leu Gly Lys Ala Thr Val Leu Pro Glu Asp Asn Gly Asn Gly
450 455 460

Val Val Met Val Ile Asp Asp Ile Thr Val Leu Ile His Ala Gln Lys
465 470 475 480

Glu Ala Ala Trp Gly Glu Val Ala Lys Arg Leu Ala His Glu Ile Arg
 485 490 495

 Asn Pro Leu Thr Pro Ile Gln Leu Ser Ala Glu Arg Leu Ala Trp Lys
 500 505 510

 Leu Gly Gly Lys Leu Asp Glu Gln Asp Ala Gln Ile Leu Thr Arg Ser
 515 520 525

 Thr Asp Thr Ile Ile Lys Gln Val Ala Ala Leu Lys Glu Met Val Glu
 530 535 540

 Ala Phe Arg Asn Tyr Ala Arg Ser Pro Ser Leu Lys Leu Glu Asn Gln
 545 550 560

 Asp Leu Asn Ala Leu Ile Gly Asp Val Leu Ala Leu Tyr Glu Ala Gly
 565 570 575

 Pro Cys Arg Phe Ala Ala Glu Leu Ala Gly Glu Pro Leu Met Met Ala
 580 585 590

 Ala Asp Thr Thr Ala Met Arg Gln Val Leu His Asn Ile Phe Lys Asn
 595 600 605

 Ala Ala Glu Ala Ala Glu Glu Ala Asp Val Pro Glu Val Arg Val Lys
 610 615 620

 Ser Glu Ala Gly Gln Asp Gly Arg Ile Val Leu Thr Val Cys Asp Asn
 625 630 635 640

 Gly Lys Gly Phe Gly Arg Glu Met Leu His Asn Ala Phe Glu Pro Tyr
 645 650 655

 Val Thr Asp Lys Pro Ala Gly Thr Gly Leu Gly Leu Pro Val Val Lys
 660 665 670

 Lys Ile Ile Glu Glu His Gly Gly Arg Ile Ser Leu Ser Asn Gln Asp
 675 680 685

 Ala Gly Gly Ala Cys Val Arg Ile Ile Leu Pro Lys Thr Val Glu Thr
 690 695 700

Tyr Ala
 705

<210> 1029
 <211> 651
 <212> DNA
 <213> Neisseria gonorrhoeae

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gccctgctgg taaaaacca cggaaaggc atggcgaac aggtcaggtt caaggcgaa 360
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gcggaatata aaaaacatct tcggcgatgc ctgcccattcg gaaacggcgt tggatttggg 600
cgcgctcaat caggcgttga gggaaatctc gaaaacggccg gaaaagccta a 651

<210> 1030
<211> 216
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1030
Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
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Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
20 25 30

Gln Lys Ala Tyr Thr Glu Glu Leu Pro Pro Leu Leu Ser Ala Leu Ser
35 40 45

Ala Val Ala Leu Val Trp Leu Ala Trp Ala Phe Val Ser Val Arg Ser
50 55 60

Lys Ala Lys Ala Glu Lys Phe Tyr Arg Glu Lys Met Ile Gln Asn Glu
65 70 75 80

Ser Ile His Pro Val Leu His Ala Ser Leu Gln His Leu Glu His Lys
85 90 95

Pro Gln Met Leu Ala Leu Leu Val Lys Asn His Gly Lys Gly Met Ala
100 105 110

Glu Gln Val Arg Phe Lys Ala Glu Val Leu Pro Asp Asp Glu Asp Ala
115 120 125

Arg Thr Ile Ala Ala Glu Leu Ala Lys Met Asp Met Phe Ala Leu Gly
130 135 140

Thr Asp Ala Val Ala Ser Gly Glu Thr Tyr Gly Arg Val Phe Ala Asp
145 150 155 160

Ile Phe Glu Leu Ser Ala Ala Leu Glu Arg Arg Ala Phe Lys Gly Ile
165 170 175

Leu Lys Leu Thr Ala Glu Tyr Lys Lys His Leu Arg Arg Cys Leu Pro
180 185 190

Phe Gly Asn Gly Val Gly Phe Gly Arg Ala Gln Ser Gly Val Glu Gly
195 200 205

Asn Leu Glu Asn Ala Gly Lys Ala
210 215

<210> 1031
 <211> 641
 <212> DNA
 <213> Neisseria meningitidis

<400> 1031
 atgatgatgc acgcttctgt ccaaagccgt ttgcaccga tactttatgt tttgatttc 60
 tttgccgtt tttgaccgc gcaaatacgg ttcaatcaga aacccatac tgaagagctg 120
 cctccgcatt tgcgcgtt gtccgcgtc gcgcgtgt ggctggcg 180
 tcggcggtt caaaggccaa gcggaaaag ttctaccgcg aaaaaatgt acagaacgaa 240
 agcatacacc ccgtcstgca cgccttttca acacttgg aacacaagcc gcaaatactc 300
 gcccgttgcg tcaaaaacca cggcaaaaggg atggcggaaac aggtcagggtt caaggcgaa 360
 gtgcgtcccg acgacgaaga cgcgcgcacg attgcgcgtc agttggcaaa aatggatatg 420
 ttgcattgg ggackgacgc gtcgcctcg ggcaaacct atggacgcgt gttcgccat 480
 attttcgagt tgtcggmaggc tttggaaaggc cgcggttca aaggaatgtt gaaactgacg 540
 gcggaatata aaaacatctt cggmgatgcc tgccgttcgg aaacggcgtt ggagttggc 600
 gcactcaatc aggcttgca ggagatttca aaaacatccg g 641

<210> 1032
 <211> 214
 <212> PRT
 <213> Neisseria meningitidis

<400> 1032
 Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
 1 5 10 15

Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
 20 25 30

Gln Lys Ala Tyr Thr Glu Glu Leu Pro Pro Leu Leu Ser Ala Leu Ser
 35 40 45

Ala Val Ala Leu Val Trp Leu Ala Trp Ala Phe Val Ser Ala Arg Ser
 50 55 60

Lys Ala Lys Ala Glu Lys Phe Tyr Arg Glu Lys Met Ile Gln Asn Glu
 65 70 75 80

Ser Ile His Pro Val Xaa His Ala Ser Leu Gln His Leu Glu His Lys
 85 90 95

Pro Gln Ile Leu Ala Leu Val Lys Asn His Gly Lys Gly Met Ala
 100 105 110

Glu Gln Val Arg Phe Lys Ala Glu Val Leu Pro Asp Asp Glu Asp Ala
 115 120 125

Arg Thr Ile Ala Ala Glu Leu Ala Lys Met Asp Met Phe Ala Leu Gly
 130 135 140

Thr Asp Ala Val Ala Ser Gly Glu Thr Tyr Gly Arg Val Phe Ala Asp
 145 150 155 160

Ile Phe Glu Leu Ser Xaa Ala Leu Glu Gly Arg Ala Phe Lys Gly Met
165 170 175

Leu Lys Leu Thr Ala Glu Tyr Lys Xaa His Leu Arg Arg Cys Leu Pro
180 185 190

Phe Gly Asn Gly Val Gly Val Gly Arg Thr Gln Ser Gly Val Ala Gly
195 200 205

Asp Phe Lys Asn Ile Arg
210

<210> 1033

<211> 650

<212> DNA

<213> Neisseria meningitidis

<400> 1033

atgatgatgc acgcttctgt ccaaagccgt ttgcacccga tactttatgt tttgatttc 60
tttgcgggtt tttgaccgc gcaaattctgg ttcaatcaga aagcctatac tgaagagctg 120
cctccgcttc tgtccgcatt gtccgcgcgc ggcgttgtt ggctggcggt ggcgttcgtg 180
tcggcgcggtt caaaggctaa ggcggaaaag ttctaccgcg aaaaaatgtt acagaacgaa 240
agcatacacc ccgtcctgcgca cgcttctttt caacacttgg aacacaagcc gcaaattgctc 300
gccctgctgg tcaaaaaccca cggcaaaggg atggcggaaac aggtcaggtt caaggcggaa 360
gtgctgcccc acgacaaga cgcgcgcacg attgcccgcg agttggcaaa aatggatatg 420
tttgcattgg ggacggacgc ggtcgccctcg ggcgaaacct atggacgcgtt gttcgccgat 480
attttcgagt tgtcgccggc tttgaaaggg cgcgcgttca aaggaatgtt gaaactgacg 540
gcggaatata aaaacatctt cggcgatgcc tgccgttcgg aaacggcggtt ggagttggc 600
gcgcctaattc aggccgttgca ggagatttca aaaacatcgg aaaagtccaa 650

<210> 1034

<211> 217

<212> PRT

<213> Neisseria meningitidis

<400> 1034

Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
1 5 10 15

Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
20 25 30

Gln Lys Ala Tyr Thr Glu Glu Leu Pro Pro Leu Leu Ser Ala Leu Ser
35 40 45

Ala Val Ala Leu Val Trp Leu Ala Trp Ala Phe Val Ser Ala Arg Ser
50 55 60

Lys Ala Lys Ala Glu Lys Phe Tyr Arg Glu Lys Met Ile Gln Asn Glu
65 70 75 80

Ser Ile His Pro Val Leu His Ala Ser Leu Gln His Leu Glu His Lys
85 90 95

Pro Gln Met Leu Ala Leu Leu Val Lys Asn His Gly Lys Gly Met Ala
100 105 110

Glu Gln Val Arg Phe Lys Ala Glu Val Leu Pro Asp Asp Glu Asp Ala
115 120 125

Arg Thr Ile Ala Ala Glu Leu Ala Lys Met Asp Met Phe Ala Leu Gly
130 135 140

Thr Asp Ala Val Ala Ser Gly Glu Thr Tyr Gly Arg Val Phe Ala Asp
145 150 155 160

Ile Phe Glu Leu Ser Ala Ala Leu Glu Gly Arg Ala Phe Lys Gly Met
165 170 175

Leu Lys Leu Thr Ala Glu Tyr Lys Xaa His Leu Arg Arg Cys Leu Pro
180 185 190

Phe Gly Asn Gly Val Gly Val Gly Arg Ala Gln Ser Gly Val Ala Gly
195 200 205

Asp Phe Lys Asn Ile Gly Lys Val Gln
210 215

<210> 1035

<211> 507

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1035

atgatgatgc acgcttctgt ccaaagtgcgt ttgcacccga tactttatgt tttgatttc 60
tttgccgggtt ttttgcaccgc gcaaatactgg ttcaatcaga aagcctatac tgaagagctg 120
cctccgcatttgcgtt gtccgcgcgtc gcgctgggtgt gcgtggcgtg ggcgttcgtg 180
tcgggtgcgtt caaaggctaa ggcagaaaaag ttctaccgcg aaaaaatgtat acagaacgaa 240
agcatacacc ccgtcctgca cgcttcttttgcgtt caacacttgg aacacaagcc gcaaatacgctc 300
gccctgtgg tcaaaaaccca cggcaaaaggc atggcggaaac aggtcaggtt caaggcggaa 360
gtgctgcccgcgtt acgacaaga cgcgcgcacg attgcccgcg agttggcaaa aatggatatg 420
ttcgcatgg ggacggacgcg ggtcgccctcg ggcgaaacctt atggcgcgtt gttcgccgt 480
atttcgagt tgtcggcggc tttggaa 507

<210> 1036

<211> 169

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1036

Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
1 5 10 15

Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
20 25 30

Gln Lys Ala Tyr Thr Glu Glu Leu Pro Pro Leu Leu Ser Ala Leu Ser
35 40 45

Ala Val Ala Leu Val Trp Leu Ala Trp Ala Phe Val Ser Val Arg Ser
50 55 60

Lys Ala Lys Ala Glu Lys Phe Tyr Arg Glu Lys Met Ile Gln Asn Glu
65 70 75 80

Ser Ile His Pro Val Leu His Ala Ser Leu Gln His Leu Glu His Lys
85 90 95

Pro Gln Met Leu Ala Leu Leu Val Lys Asn His Gly Lys Gly Met Ala
100 105 110

Glu Gln Val Arg Phe Lys Ala Glu Val Leu Pro Asp Asp Glu Asp Ala
115 120 125

Arg Thr Ile Ala Ala Glu Leu Ala Lys Met Asp Met Phe Ala Leu Gly
130 135 140

Thr Asp Ala Val Ala Ser Gly Glu Thr Tyr Gly Arg Val Phe Ala Asp
145 150 155 160

Ile Phe Glu Leu Ser Ala Ala Leu Glu
165

<210> 1037
<211> 666
<212> DNA
<213> Neisseria meningitidis

<400> 1037
atgatgatgc acgcttctgt ccaaagccgt ttgcgaccga tactttatgt tttgatttc 60
tttgcgggtt tttgaccgc gcaaatacgg ttcaatcaga aagcctatac tgaagagctg 120
cctccgcttc tgtccgcatt gtccgcgcgc gcgctgggtgt ggctggcggt ggcgttcgtg 180
tcggcgcgtt caaaggccaa ggcggaaaag ttctaccgcg aaaaaatgtat acagaacgaa 240
agcatacacc ccgtcctgca cgcccttttgc caacacttgg aacacaagcc gcaaatactc 300
gccctgctgg tcaaaaaccca cggcaaaagggt atggcggaaac aggtcaggtt caaggcggaa 360
gtgctgcccgc acgacqaaga cgcgccgcacg attgcccgcg agttggcaaa aatggatatg 420
ttcgcatgg ggacggacgc ggtcgccctcg ggcgaaacctt atggacgcgt gttcgccgat 480
atttcgagt tgtcgccgc tttggaaagggt cgcgcgttca aaggaatgtt gaaactgacg 540
gcggaaataaaaacatctt cggcgatgcc tgccgttcgg aaacggcggtt ggagttgggc 600
gcactcaatc aggcgttgca ggagatttca aaaacatcgg aaaagtccaa acggatattt 660
tattga 666

<210> 1038
<211> 221
<212> PRT
<213> Neisseria meningitidis

<400> 1038
Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
1 5 10 15
Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
20 25 30

Gln Lys Ala Tyr Thr Glu Glu Leu Pro Pro Leu Leu Ser Ala Leu Ser
 35 40 45
 Ala Val Ala Leu Val Trp Leu Ala Trp Ala Phe Val Ser Ala Arg Ser
 50 55 60
 Lys Ala Lys Ala Glu Lys Phe Tyr Arg Glu Lys Met Ile Gln Asn Glu
 65 70 75 80
 Ser Ile His Pro Val Leu His Ala Ser Leu Gln His Leu Glu His Lys
 85 90 95
 Pro Gln Ile Leu Ala Leu Leu Val Lys Asn His Gly Lys Gly Met Ala
 100 105 110
 Glu Gln Val Arg Phe Lys Ala Glu Val Leu Pro Asp Asp Glu Asp Ala
 115 120 125
 Arg Thr Ile Ala Ala Glu Leu Ala Lys Met Asp Met Phe Ala Leu Gly
 130 135 140
 Thr Asp Ala Val Ala Ser Gly Glu Thr Tyr Gly Arg Val Phe Ala Asp
 145 150 155 160
 Ile Phe Glu Leu Ser Ala Ala Leu Glu Gly Arg Ala Phe Lys Gly Met
 165 170 175
 Leu Lys Leu Thr Ala Glu Tyr Lys Asn Ile Phe Gly Asp Ala Cys Arg
 180 185 190
 Ser Glu Thr Ala Leu Glu Leu Gly Ala Leu Asn Gln Ala Leu Gln Glu
 195 200 205
 Ile Ser Lys Thr Ser Glu Lys Ser Lys Arg Ile Phe Tyr
 210 215 220

<210> 1039
 <211> 666
 <212> DNA
 <213> Neisseria meningitidis

<400> 1039
 atgatgatgc acgcttctgt ccaaagccgt ttcgcaccga tactttatgt tttgattttc 60
 tttgccggtt ttttgaccgc gcaaatactgg ttcaatcaga aagcctatac tgaagagctg 120
 cctccgcttc tgtccgcatt gtccgcgcgtc gcgctggtgt ggctggcggt ggcgttcgtg 180
 tcggcgcgtt caaaggctaa ggccggaaaag ttctaccgcg aaaaaatgtat acagaacgaa 240
 agcatacacc ccgtcctgca cgcttctttt caacacttgg aacacaagcc gcaaataatgctc 300
 gccctgctgg tcaaaaaacca cggcaaaaggg atggccggaaac aggtcaggtt caaggcggaa 360
 gtgctgcccc acgacagaaga cgccgcgcacg attggccgcgtt agttggcaaa aatggatatg 420
 tttgcattgg ggacggacgc ggtcgccctcg ggcggaaaacctt atggacgcgtt gttcgccgat 480
 attttcgagt tgtcggcggc tttggaaaggg cgccgcgttca aaggaatgtt gaaactgacg 540
 gcgaaatata aaaacatctt cggcgatgcc tgccgttcgg aaacggcggtt ggagttggc 600
 gcgctcaatc aggcgttgca ggagatttca aaaacatcgg aaaagtccaa acggatattt 660
 tattga

<210> 1040
<211> 221
<212> PRT
<213> Neisseria meningitidis

<400> 1040
Met Met Met His Ala Ser Val Gln Ser Arg Phe Ala Pro Ile Leu Tyr
1 5 10 15

Val Leu Ile Phe Phe Ala Gly Phe Leu Thr Ala Gln Ile Trp Phe Asn
20 25 30

Gln Lys Ala Tyr Thr Glu Glu Leu Pro Pro Leu Leu Ser Ala Leu Ser
35 40 45

Ala Val Ala Leu Val Trp Leu Ala Trp Ala Phe Val Ser Ala Arg Ser
50 55 60

Lys Ala Lys Ala Glu Lys Phe Tyr Arg Glu Lys Met Ile Gln Asn Glu
65 70 75 80

Ser Ile His Pro Val Leu His Ala Ser Leu Gln His Leu Glu His Lys
85 90 95

Pro Gln Met Leu Ala Leu Leu Val Lys Asn His Gly Lys Gly Met Ala
100 105 110

Glu Gln Val Arg Phe Lys Ala Glu Val Leu Pro Asp Asp Glu Asp Ala
115 120 125

Arg Thr Ile Ala Ala Glu Leu Ala Lys Met Asp Met Phe Ala Leu Gly
130 135 140

Thr Asp Ala Val Ala Ser Gly Glu Thr Tyr Gly Arg Val Phe Ala Asp
145 150 155 160

Ile Phe Glu Leu Ser Ala Ala Leu Glu Gly Arg Ala Phe Lys Gly Met
165 170 175

Leu Lys Leu Thr Ala Glu Tyr Lys Asn Ile Phe Gly Asp Ala Cys Arg
180 185 190

Ser Glu Thr Ala Leu Glu Leu Gly Ala Leu Asn Gln Ala Leu Gln Glu
195 200 205

Ile Ser Lys Thr Ser Glu Lys Ser Lys Arg Ile Phe Tyr
210 215 220

<210> 1041
<211> 582
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1041
atgggtgcgg gtgttagtatt cgttgtcttt cagccgttct tcagcctgtt tcgagcggtt 60
ttcgaggcg gagtccgtat agtcgaggga gcgcacgatg ccgctgaatg cgacttcttg 120

tccgaggaat ttacccgtat ccggatcggt gatgtttta ttgattcggt aggtcagata 180
 acggcccggt tcttcaggc ctgggtgt aaccctggcg ccttgggt acagcagcct 240
 gccttccggg cccgagagca ggccggcgcc ggcagcggtt tcttgcggg aaacgatttg 300
 cgggtgctgc ataaagacgc ggtagaagtt gacatcgatg gcggaaatac cgtatccgga 360
 cacttccta tccggactga tttgacgac gggatgccc tctgtctgtt ccaagccgag 420
 ggcgggttcg cgcacaacgt agcgaacac caataacctgg cccggataaaa tcaggtcggg 480
 attgtggatt tgatcccggt tcgcgcggc caggggggga ccattgccac gggctgtaca 540
 ggtatggcc cgaaataaccc cacagggtgt cgccctgttt ga 582

<210> 1042

<211> 193

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1042

Met Gly Ala Gly Val Val Phe Val Val Phe Gln Pro Phe Phe Ser Leu
 1 5 10 15

Phe Arg Ala Leu Phe Glu Gly Gly Val Gly Ile Val Glu Gly Ala His
 20 25 30

Asp Ala Ala Glu Cys Asp Phe Leu Ser Glu Glu Phe Thr Arg Ile Arg
 35 40 45

Ile Gly Asp Val Phe Ile Asp Ser Val Gly Gln Ile Thr Ala Arg Phe
 50 55 60

Phe Gln Ala Phe Gly Val Asn Pro Gly Ala Phe Gly Val Gln Gln Pro
 65 70 75 80

Ala Phe Arg Ala Arg Glu Gln Ala Arg Arg Gly Ser Gly Phe Phe Ala
 85 90 95

Gly Asn Asp Leu Arg Val Leu His Lys Asp Ala Val Glu Val Asp Ile
 100 105 110

Asp Gly Gly Asn Thr Val Ser Gly His Phe Leu Ile Arg Thr Asp Phe
 115 120 125

Asp Asp Gly Asp Ala Val Cys Leu Phe Gln Ala Glu Ala Arg Phe Ala
 130 135 140

Ala Asn Val Ala Gln His Gln Tyr Leu Ala Arg Ile Asn Gln Val Gly
 145 150 155 160

Ile Val Asp Leu Ile Pro Val Arg Ala Pro Gln Gly Gly Thr Ile Ala
 165 170 175

Thr Gly Cys Thr Gly Ile Cys Pro Lys Tyr Pro Thr Gly Cys Arg Pro
 180 185 190

Val

<210> 1043

<211> 513
<212> DNA
<213> Neisseria meningitidis

<400> 1043
atgggtgcgg gtatggtatt cgttgtctt cggccgttct ccagcctgtt tcgagcggtt 60
ttcgaggaca gagtcggat agtcgaggga ggcacgatg cgcgtaatg cgacttcctg 120
cccgaggaat ttacccttat cccgatcggt gatgtttta ttgattcggt aggtcaggt 180
gcggcccgcc tctttcaggc ctttggtgt aaccctgggt cctttgggt acagcagcct 240
gccttcgggg cccgagwrca sgcgccgygc ggcagcggtt tctttgcggg aaacgatttg 300
cgatgcgcgc ataaagatgc ggtagaagtt gacatcgatg gcggaaatac cgtatccgga 360
cacttcctta tccggactca ttttgacgac gggatgccc tctgtctgtt ccaagccgag 420
gcgcgggttcg ccgtcaacgt ggccaaacac caataacctgg tccggataaaa tcaggtcggg 480
attgtggatt tcatccccgt tcgcgttycca cag 513

<210> 1044
<211> 171
<212> PRT
<213> Neisseria meningitidis

<400> 1044
Met Gly Ala Gly Met Val Phe Val Val Phe Arg Pro Phe Ser Ser Leu
1 5 10
Phe Arg Ala Leu Phe Glu Asp Arg Val Gly Ile Val Glu Gly Ala His
20 25 30
Asp Ala Ala Glu Cys Asp Phe Leu Pro Glu Glu Phe Thr Arg Ile Arg
35 40 45
Ile Gly Asp Val Phe Ile Asp Ser Val Gly Gln Val Ala Ala Arg Leu
50 55 60
Phe Gln Ala Phe Gly Val Asn Pro Gly Ala Phe Gly Val Gln Gln Pro
65 70 75 80
Ala Phe Arg Ala Arg Xaa Xaa Ala Arg Xaa Gly Ser Gly Phe Phe Ala
85 90 95
Gly Asn Asp Leu Arg Met Pro His Lys Asp Ala Val Glu Val Asp Ile
100 105 110
Asp Gly Gly Asn Thr Val Ser Gly His Phe Leu Ile Arg Thr His Phe
115 120 125
Asp Asp Gly Asp Ala Val Cys Leu Phe Gln Ala Glu Ala Arg Phe Ala
130 135 140
Val Asn Val Ala Gln His Gln Tyr Leu Val Arg Ile Asn Gln Val Gly
145 150 155 160
Ile Val Asp Leu Ile Pro Val Arg Val Pro Gln
165 170

<210> 1045

<211> 581
<212> DNA
<213> Neisseria meningitidis

<400> 1045
atgggtgcgg gtatggtatt cgttgtctt cggccgttct ccagcctgtt tcgagcggtt 60
ttcgaggaca gagtcggat agtcgaggga ggcacgatg cgcgtaatg cgactccctg 120
cccgaggaat ttaccctat ccggatcggt gatgtttta ttgattcggt aggtcaggtt 180
gcggcccccgc tctttcaggc ctttgggtt aaccctgggt ctttgggt acagcagcct 240
gccttcggg cccgagagca ggcgcggcgc ggcagcggtt tcttgcggg aaacgatttg 300
cgggtgcgcg ataaagatgc gtagaaagt gacatcgatg gcggaaatac cgtatccgga 360
cacttccta tccggactca ttttgcac gggatgcgg tctgtctgtt ccaagccgag 420
gcgcggttcg ccgtcaacgt ggcaacac caataacctgg tccagataaaa tcaggtcggg 480
attgtggatt tgatccccgt tcgcgtccca caggcggccc cattgccacg ggctgtacag 540
gtatggccc gaaatgcccc acagggtgtc gccctgtttt a 581

<210> 1046
<211> 193
<212> PRT
<213> Neisseria meningitidis

<400> 1046
Met Gly Ala Gly Met Val Phe Val Val Phe Arg Pro Phe Ser Ser Leu
1 5 10 15

Phe Arg Ala Leu Phe Glu Asp Arg Val Gly Ile Val Glu Gly Ala His
20 25 30

Asp Ala Ala Glu Cys Asp Phe Leu Pro Glu Glu Phe Thr Arg Ile Arg
35 40 45

Ile Gly Asp Val Phe Ile Asp Ser Val Gly Gln Val Ala Ala Arg Leu
50 55 60

Phe Gln Ala Phe Gly Val Asn Pro Gly Ala Phe Gly Val Gln Gln Pro
65 70 75 80

Ala Phe Arg Ala Arg Glu Gln Ala Arg Arg Gly Ser Gly Phe Phe Ala
85 90 95

Gly Asn Asp Leu Arg Val Pro His Lys Asp Ala Val Glu Val Asp Ile
100 105 110

Asp Gly Gly Asn Thr Val Ser Gly His Phe Leu Ile Arg Thr His Phe
115 120 125

Asp Asp Gly Asp Ala Val Cys Leu Phe Gln Ala Glu Ala Arg Phe Ala
130 135 140

Val Asn Val Ala Gln His Gln Tyr Leu Val Gln Ile Asn Gln Val Gly
145 150 155 160

Ile Val Asp Leu Ile Pro Val Arg Val Pro Gln Ala Ala Xaa Ile Ala
165 170 175

Thr Gly Cys Thr Gly Ile Cys Pro Lys Cys Pro Thr Gly Cys Arg Pro

180

185

190

Val

<210> 1047
<211> 714
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1047
atggagcttg ggcataatcgat attccttgcg ctttgcgcgc gttcagacgg cctttttact 60
ttccagacat tccgcgcaggcc cgccgttcgcg caagatacag ctcgggcatt cgccgcgc 120
gccgacgata cccttgcgtgc aggtgtgggt ctgttcgcgg atgttagtcca acacgccc 180
ttcgtccgc aacgcccacg ttgcgcctt ggtcaggtac atcagcggcg tgtggattt 240
aaaatcgtag tccatcgcca gattaagggt aacgttcatg gatttgcacga acacgcccgc 300
gcagtgcggaa tagccccaaa aatcggtttc gcacacgcgc gcgtatgtt gccggatacc 360
ctgcgccttgc gcaaaaaatgg cggcgtaaag cagaaaaagc gcgttacgccc cgtccacaaa 420
gttattggga acgcccgttgcg cggcggtttc gatggcgccg gtttcgatgg cggcggtttc 480
gtccatcagg gcgttgcgcg taatctgcgc catcaggctc aaatcgagta cggttgact 540
gacacccaaa tcctgcgcga tccactctgc gcgttccagc tcgacggcat ggcgttgc 600
gtatcggaag gtatcggttgc ggacgtttc gcgcgcgtag gtttggatgg cctgaatcag 660
gcaggtggtc gaatcctgac cgcccgagaa gatgaccaag gctttttgtt ttga 714

<210> 1048
<211> 237
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1048
Met Glu Leu Gly His Ile Val Phe Leu Val Leu Cys Ala Arg Ser Asp
1 5 10 15

Gly Leu Phe Thr Phe Gln Thr Phe Arg Gln Pro Ala Phe Ala Gln Asp
20 25 30

Thr Ala Arg Ala Phe Ala Ala Ala Asp Asp Thr Leu Val Ala Gly
35 40 45

Val Gly Leu Phe Ala Asp Val Val Gln His Ala His Phe Val Arg Gln
50 55 60

Arg Pro Arg Leu Arg Leu Gly Gln Val His Gln Arg Arg Val Asp Leu
65 70 75 80

Lys Ile Val Val His Arg Gln Ile Lys Gly Asn Val His Gly Phe Asp
85 90 95

Glu His Ala Ala Val Gly Ile Ala Arg Lys Ile Gly Phe Ala His
100 105 110

Ala Arg Asp Asp Val Pro Asp Thr Leu Pro Phe Gly Lys Asn Gly Gly
115 120 125

Val Lys Gln Glu Lys Arg Val Thr Pro Val His Lys Gly Ile Gly Asn

130	135	140
Ala Val Val Gly Gly Phe Asp Gly Gly Gly Phe Asp Gly Gly Gly Phe		
145	150	155
Val His Gln Gly Val Val Arg Asn Leu Pro His Gln Ala Gln Ile Glu		
165	170	175
Tyr Gly Leu Thr Asp Thr Gln Ile Leu Arg Asp Pro Leu Cys Ala Phe		
180	185	190
Gln Leu Asp Gly Met Ala Leu Pro Val Ser Glu Gly Asp Gly Leu Asp		
195	200	205
Val Phe Ala Pro Val Gly Leu Asp Cys Leu Asn Gln Ala Gly Gly Arg		
210	215	220
Ile Leu Thr Ala Arg Glu Asp Asp Gln Gly Phe Leu Val		
225	230	235

<210> 1049
 <211> 699
 <212> DNA
 <213> Neisseria meningitidis

<400> 1049
 atggagcttg ggcataatcg attcctttagt gtttgcgcgt gttcagacgg cctttttact 60
 ttccagatat tccgcccagcc cgccgttcgcg caagatacag ctcgggcatt cgccggcagcc 120
 gcccacgatg ccgttatagc aggtgtgggt ttgctcgccg atatagtcca gcacgccccat 180
 ttcttcgcgc aacgcccacg tttgcgcctt ggtcaagatac atcagcggcg tgtggatttg 240
 aaaatcatag tccatcgcca aattaagggtt aacgttcatc gatttgacaa acacgtcg 300
 gcagtgcggga tagccggaga agtcggtttc gcacacgccc gcatgtatgtt gccgtatccc 360
 ctgccttttgcgtaaatcg cggcatagag caggaaaagc gcgttgcggc cgtctacaaa 420
 ggtattcggaa acgcccgtttt cggcagtttc gatggcggcg gtgtcgtcca tcagggcatt 480
 gtgcgtatc tgccgcattca ggctcaagtc gagtacgggtt tggttgacgc ccaaattctg 540
 cgcattccat cgggcacgtt ccagctcgac ggcattggcgt tgcccgtatt ggaaagtaat 600
 ggcttggacg ttttcgcgc cgttaggtttt gattgcctga atcaggcagg tggtcgaatc 660
 ctgaccgccc gaaaagatga ccaaggcttg ttggttga 699

<210> 1050
 <211> 232
 <212> PRT
 <213> Neisseria meningitidis

<400> 1050
 Met Glu Leu Gly His Ile Val Phe Leu Met Val Cys Ala Cys Ser Asp
 1 5 10 15
 Gly Leu Phe Thr Phe Gln Ile Phe Arg Gln Pro Ala Phe Ala Gln Asp
 20 25 30
 Thr Ala Arg Ala Phe Ala Ala Ala Asp Asp Ala Val Ile Ala Gly
 35 40 45
 Val Gly Leu Leu Ala Asp Ile Val Gln His Ala His Phe Val Arg Gln

50

55

60

Arg Pro Arg Leu Arg Leu Gly Gln Ile His Gln Arg Arg Val Asp Leu
65 70 75 80

Lys Ile Ile Val His Arg Gln Ile Lys Gly Asn Val His Arg Phe Asp
85 90 95

Lys His Val Ala Ala Val Gly Ile Ala Gly Glu Val Gly Phe Ala His
100 105 110

Ala Arg Asp Asp Val Pro Tyr Pro Leu Pro Phe Gly Val Asn Arg Gly
115 120 125

Ile Glu Gln Glu Lys Arg Val Ala Ala Val Tyr Lys Gly Ile Arg Asn
130 135 140

Ala Val Phe Gly Ser Phe Asp Gly Gly Val Val His Gln Gly Ile
145 150 155 160

Val Arg Asn Leu Pro His Gln Ala Gln Val Glu Tyr Gly Leu Phe Asp
165 170 175

Ala Gln Ile Leu Arg Asn Pro Ala Gly Thr Phe Gln Leu Asp Gly Met
180 185 190

Ala Leu Pro Val Leu Glu Ser Asn Gly Leu Asp Val Phe Ala Pro Val
195 200 205

Gly Leu Asp Cys Leu Asn Gln Ala Gly Gly Arg Ile Leu Thr Ala Arg
210 215 220

Lys Asp Asp Gln Gly Leu Leu Val
225 230

<210> 1051

<211> 699

<212> DNA

<213> Neisseria meningitidis

<400> 1051

atggagcttg ggcataatcg attccttatg gtttgcgcgt gttcagacgg cctttttact 60
ttccagatat tccgccagcc cgccgttcgcg caagatacag ctcggcatt cgccgcagcc 120
gccgacatg ccgttatagc aggtgtgggt ttgctcgccg atatagtcca gcgcgcct 180
ttcgtccgcc aacgccaag tttgcgcctt ggtcagatac atcagcggcg tgtgatttg 240
aaaatcatag tccatcgcca gattaagggt aacgttcatg gatttgacaa acacgtcacg 300
gcagtcggga tagccggaga agtcggttc gcacacgccc gcgtatgtt gccgtatccc 360
ctgccctttg gcttaaatcg cggcatagag caggaaaagc gcgttgcggc cgtctacaaa 420
ggtattcggaa acgcccgttt cggcagttc gatggcggcg gtgtcgtcca tcagggcatt 480
gtgcgtatc tgccgcattca ggctcaagtc gagtacggtt tggttgacgc ccaaattctg 540
cgcaatccag cgggcacgtt ccagctcgac ggcattggcgt tgccccgtatt gaaaaagtaat 600
ggcttggacg tttcgcgcctt cgttaggttt gattgcctga atcaggcagg tggtcgaatc 660
ctgaccgccc gaaaagatga ccaaggctt ttgggttga 699

<210> 1052

<211> 232
<212> PRT
<213> Neisseria meningitidis

<400> 1052
Met Glu Leu Gly His Ile Val Phe Leu Met Val Cys Ala Cys Ser Asp
1 5 10 15
Gly Leu Phe Thr Phe Gln Ile Phe Arg Gln Pro Ala Phe Ala Gln Asp
20 25 30
Thr Ala Arg Ala Phe Ala Ala Ala Asp Asp Ala Val Ile Ala Gly
35 40 45
Val Gly Leu Leu Ala Asp Ile Val Gln Arg Ala His Phe Val Arg Gln
50 55 60
Arg Pro Ser Leu Arg Leu Gly Gln Ile His Gln Arg Arg Val Asp Leu
65 70 75 80
Lys Ile Ile Val His Arg Gln Ile Lys Gly Asn Val His Gly Phe Asp
85 90 95
Lys His Val Thr Ala Val Gly Ile Ala Gly Glu Val Gly Phe Ala His
100 105 110
Ala Arg Asp Asp Val Pro Tyr Pro Leu Pro Phe Gly Val Asn Arg Gly
115 120 125
Ile Glu Gln Glu Lys Arg Val Ala Ala Val Tyr Lys Gly Ile Arg Asn
130 135 140
Ala Val Phe Gly Ser Phe Asp Gly Gly Val Val His Gln Gly Ile
145 150 155 160
Val Arg Asn Leu Pro His Gln Ala Gln Val Glu Tyr Gly Leu Phe Asp
165 170 175
Ala Gln Ile Leu Arg Asn Pro Ala Gly Thr Phe Gln Leu Asp Gly Met
180 185 190
Ala Leu Pro Val Leu Glu Ser Asn Gly Leu Asp Val Phe Ala Pro Val
195 200 205
Gly Leu Asp Cys Leu Asn Gln Ala Gly Gly Arg Ile Leu Thr Ala Arg
210 215 220
Lys Asp Asp Gln Gly Phe Leu Val
225 230

<210> 1053
<211> 549
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1053
atggcacgtt taaccgtaca caccctcgaa accgcccccg aagccgccaa accgcgcgta 60
gaggccgtac ccaaaaacaa cggctttatc cccaacctca tcggcgtatt ggcaaacgcc 120
cccgaagctt tggcggttta ccaagaagtc ggcaagctca acgcccgc当地 cagcctgacc 180
gccggcgaag tcgaagtgtat ccggatcatc gccgtccgca ccaaccaatg cagcttctgc 240
gtggcaggc当地 acacccaaact cgcaaccctg aaaaaactcc tgtccgagca atccctcaat 300
gccgcccgc当地 ctttggcggc aggtaaatct gacgatgcca aactcggcgc gcttggcgc当地 360
ttcacccaaag ccgtaatggc gaaaaaaagc gcagtatccg acgacgaaact caacgccttc 420
ctcgaagcgg gctacaaccg gcagcaggca gtcgaagtcg taatggcgt agcctggca 480
actttgtgca actacgccaa caacctcgcc caaaccgaaa tcaaccccaa attgcaggca 540
tacgcctaa 549

<210> 1054
<211> 182
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1054
Met Ala Arg Leu Thr Val His Thr Leu Glu Thr Ala Pro Glu Ala Ala
1 5 10 15

Lys Pro Arg Val Glu Ala Val Pro Lys Asn Asn Gly Phe Ile Pro Asn
20 25 30

Leu Ile Gly Val Leu Ala Asn Ala Pro Glu Ala Leu Ala Phe Tyr Gln
35 40 45

Glu Val Gly Lys Leu Asn Ala Ala Asn Ser Leu Thr Ala Gly Glu Val
50 55 60

Glu Val Ile Arg Ile Ile Ala Val Arg Thr Asn Gln Cys Ser Phe Cys
65 70 75 80

Val Ala Gly His Thr Lys Leu Ala Thr Leu Lys Lys Leu Leu Ser Glu
85 90 95

Gln Ser Leu Asn Ala Ala Arg Ala Leu Ala Ala Gly Lys Ser Asp Asp
100 105 110

Ala Lys Leu Gly Ala Leu Ala Ala Phe Thr Gln Ala Val Met Ala Lys
115 120 125

Lys Gly Ala Val Ser Asp Asp Glu Leu Asn Ala Phe Leu Glu Ala Gly
130 135 140

Tyr Asn Arg Gln Gln Ala Val Glu Val Val Met Gly Val Ala Leu Ala
145 150 155 160

Thr Leu Cys Asn Tyr Ala Asn Asn Leu Ala Gln Thr Glu Ile Asn Pro
165 170 175

Lys Leu Gln Ala Tyr Ala
180

<210> 1055

<211> 233
<212> DNA
<213> Neisseria meningitidis

<400> 1055
gcagcaggcg aatttacgta tgccaaactc ggccgcgtcg ccgccttcac ccaagccgt 60
atggcgaaaa aaggcgcggt atccgacgag gaactcaaag cattttcga tgcgggctac 120
aaccagcagc aggcaatcgatg ggcgtasyct gcacaaccctg tgcaactacg 180
tcaacaacctt cgacaaacc gaaatcaacc ccgaatttgcg gcattacgccc tga 233

<210> 1056
<211> 77
<212> PRT
<213> Neisseria meningitidis

<400> 1056
Ala Ala Gly Glu Phe Asp Asp Ala Lys Leu Gly Ala Leu Ala Ala Phe
1 5 10 15

Thr Ala Val Met Ala Lys Lys Gly Ala Val Ser Asp Glu Glu Leu Lys
20 25 30

Ala Phe Phe Asp Ala Gly Tyr Asn Gln Gln Gln Ala Val Glu Val Val
35 40 45

Met Gly Val Xaa Leu Ala Thr Leu Cys Asn Tyr Val Asn Asn Leu Gly
50 55 60

Gln Thr Glu Ile Asn Pro Glu Leu Gln Ala Tyr Ala Xaa
65 70 75

<210> 1057
<211> 549
<212> DNA
<213> Neisseria meningitidis

<400> 1057
atggcacgtt taaccgtaca caccctcgaa accgcccccg aagccgcca agcgccgtc 60
gaggcggtac ttcaaaacaa cggcttatac cccaaacctt tcggcgattt atcaaacgcc 120
cccgaaaggct tggcggttta ccaagaagtc ggcaagctca acgcccggaa cagcctgacc 180
gccggcgaag tcgaagtaat ccagattatt gccgcccgc ccaaccaatg cggcttctgc 240
gtggcaggggc acaccaaact cgcaaccctg aaaaaactcc tttccgaaca atccgtcaaa 300
gccgcgcgcgc ctggcgccg aggcaattt gacgatgcta aactcgccgc gctcgccgccc 360
tttaccaag ccgtaatggc aaaaaaaaggc gcggtatccg acgaggaact caaagcattt 420
tttgatgcgg gtcacacca gcagcaggca gtcgaagtgc tgatggcggt agccttggca 480
actttgtgca actacgtcaa caacctcgga caaaccgaaa tcaaccccgaa attgcaggct 540
tacgcctga 549

<210> 1058
<211> 182
<212> PRT
<213> Neisseria meningitidis

<400> 1058

Met Ala Arg Leu Thr Val His Thr Leu Glu Thr Ala Pro Glu Ala Ala
 1 5 10 15
 Lys Ala Arg Val Glu Ala Val Leu Gln Asn Asn Gly Phe Ile Pro Asn
 20 25 30
 Leu Ile Gly Val Leu Ser Asn Ala Pro Glu Ala Leu Ala Phe Tyr Gln
 35 40 45
 Glu Val Gly Lys Leu Asn Ala Ala Asn Ser Leu Thr Ala Gly Glu Val
 50 55 60
 Glu Val Ile Gln Ile Ile Ala Ala Arg Thr Asn Gln Cys Gly Phe Cys
 65 70 75 80
 Val Ala Gly His Thr Lys Leu Ala Thr Leu Lys Lys Leu Leu Ser Glu
 85 90 95
 Gln Ser Val Lys Ala Ala Arg Ala Leu Ala Ala Gly Glu Phe Asp Asp
 100 105 110
 Ala Lys Leu Gly Ala Leu Ala Ala Phe Thr Gln Ala Val Met Ala Lys
 115 120 125
 Lys Gly Ala Val Ser Asp Glu Glu Leu Lys Ala Phe Phe Asp Ala Gly
 130 135 140
 Tyr Asn Gln Gln Gln Ala Val Glu Val Val Met Gly Val Ala Leu Ala
 145 150 155 160
 Thr Leu Cys Asn Tyr Val Asn Asn Leu Gly Gln Thr Glu Ile Asn Pro
 165 170 175
 Glu Leu Gln Ala Tyr Ala
 180

<210> 1059
 <211> 687
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1059
 ttgactttaa cccgaaaaac cttttcctc ctcaccgcgc cggtcgac acactccctt 60
 cagacggcat ccggccacgc agtgtcaag ccggaaaaac tgcacgcctc cgccaaaccgc 120
 agctacaaag tcgccccatt cacgcaaacc ggcaacgcct cgtggtaggg cgccagggttt 180
 cacgggcgcga aaacttccgg cggagaccgc tacgatatga acgccttac cgccgcccac 240
 aaaaccctgc ccattccccag ccatgtgcgc gtaaccaaca ccaaaaacgg caaaagcgtc 300
 atcgccgcgc tcaacgaccg cggcccttc cacggcaacc gcatcatcga cgtatccaaa 360
 gccgcgcgcga aaaaattggg ctttgtcagc caaggacgg cacacgtcaa aatcgaacaa 420
 atcgccgcgc gccaatccgc accgggtgcc gaaaacaaag acatctttat cgacttgaaa 480
 tctttcggtt cggAACACGA AGCACAAGCC TATCTGAACC AAGCCGCCA AAATTGCC 540
 gcttcgtcat caagccccaa cctctcggtt gaaaaacgcgc gttacgaata cgttgtcaaa 600
 atggggccgt ttgcctcgca ggaacgcgc gccgaagccg aagcgcaggc acgcggatg 660
 gttcggggcgg tactgacctc cggttga 687

<210> 1060
<211> 228
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1060
Leu Thr Leu Thr Arg Lys Thr Leu Phe Leu Leu Thr Ala Ala Phe Gly
1 5 10 15

Thr His Ser Leu Gln Thr Ala Ser Ala Asp Ala Val Val Lys Pro Glu
20 25 30

Lys Leu His Ala Ser Ala Asn Arg Ser Tyr Lys Val Ala Glu Phe Thr
35 40 45

Gln Thr Gly Asn Ala Ser Trp Tyr Gly Gly Arg Phe His Gly Arg Lys
50 55 60

Thr Ser Gly Gly Asp Arg Tyr Asp Met Asn Ala Phe Thr Ala Ala His
65 70 75 80

Lys Thr Leu Pro Ile Pro Ser His Val Arg Val Thr Asn Thr Lys Asn
85 90 95

Gly Lys Ser Val Ile Val Arg Val Asn Asp Arg Gly Pro Phe His Gly
100 105 110

Asn Arg Ile Ile Asp Val Ser Lys Ala Ala Ala Gln Lys Leu Gly Phe
115 120 125

Val Ser Gln Gly Thr Ala His Val Lys Ile Glu Gln Ile Val Pro Gly
130 135 140

Gln Ser Ala Pro Val Ala Glu Asn Lys Asp Ile Phe Ile Asp Leu Lys
145 150 155 160

Ser Phe Gly Thr Glu His Glu Ala Gln Ala Tyr Leu Asn Gln Ala Ala
165 170 175

Gln Asn Phe Ala Ala Ser Ser Ser Pro Asn Leu Ser Val Glu Lys
180 185 190

Arg Arg Tyr Glu Tyr Val Val Lys Met Gly Pro Phe Ala Ser Gln Glu
195 200 205

Arg Ala Ala Glu Ala Glu Ala Gln Ala Arg Gly Met Val Arg Ala Val
210 215 220

Leu Thr Ser Gly
225

<210> 1061
<211> 720
<212> DNA
<213> Neisseria meningitidis

<400> 1061

ttgacttaa cccgaaaaac cctttcctt ctcaccggccg cattcggtcac acactccctt 60
cagacggcat ccgcgcacgc agtggtaaag gcagaaaaac tgcacgcctc cgccaaaccgc 120
agctacaaag tcgcccggaaa acgctacacg ccgaaaaacc aagtgcggca attcacgcaa 180
accggcaacg cctcgtggta cgccggcagg tttcacgggc gcaaaaactc cggccggagaa 240
cgatacgata tgaacgcctt taccggcc cacaaaaccc tgccccatccc cagctatgtg 300
cgcgtaacca ataccaaaaa cggcaaaagc gtcatcggtcc gcgtcaacga ccgcggccccc 360
ttccacggca accgcatcat cgacgtatcc aaagccggccg cgcaaaaatt gggcttggtc 420
aaccaaggga cggcacacgt caaaatcgaa caaatcgcc cggggccaatc cgccaccgggtt 480
gccggaaaaca aagacatctt tatcgacttg aaatcttcg gtacggaaaca cgaagcacaa 540
gccttatctga accaagccgc cccaaacttc gccgttgcgt catcggttac gaacctctcg 600
gttggaaaac gccgttacga atacgtcggtc aaaatgggac cggttacctc gcaggaacgc 660
gccggccgaag ccgaagctca ggccgcgcgg atggttcggg cggtatttgc acggccgtga 720

<210> 1062

<211> 239

<212> PRT

<213> Neisseria meningitidis

<400> 1062

Leu Thr Leu Thr Arg Lys Thr Leu Phe Leu Leu Thr Ala Ala Phe Gly
1 5 10 15

Thr His Ser Leu Gln Thr Ala Ser Ala Asp Ala Val Val Lys Ala Glu
20 25 30

Lys Leu His Ala Ser Ala Asn Arg Ser Tyr Lys Val Ala Gly Lys Arg
35 40 45

Tyr Thr Pro Lys Asn Gln Val Ala Glu Phe Thr Gln Thr Gly Asn Ala
50 55 60

Ser Trp Tyr Gly Gly Arg Phe His Gly Arg Lys Thr Ser Gly Gly Glu
65 70 75 80

Arg Tyr Asp Met Asn Ala Phe Thr Ala Ala His Lys Thr Leu Pro Ile
85 90 95

Pro Ser Tyr Val Arg Val Thr Asn Thr Lys Asn Gly Lys Ser Val Ile
100 105 110

Val Arg Val Asn Asp Arg Gly Pro Phe His Gly Asn Arg Ile Ile Asp
115 120 125

Val Ser Lys Ala Ala Ala Gln Lys Leu Gly Phe Val Asn Gln Gly Thr
130 135 140

Ala His Val Lys Ile Glu Gln Ile Val Pro Gly Gln Ser Ala Pro Val
145 150 155 160

Ala Glu Asn Lys Asp Ile Phe Ile Asp Leu Lys Ser Phe Gly Thr Glu
165 170 175

His Glu Ala Gln Ala Tyr Leu Asn Gln Ala Ala Gln Asn Phe Ala Val
180 185 190

Ser Ser Ser Gly Thr Asn Leu Ser Val Glu Lys Arg Arg Tyr Glu Tyr
195 200 205

Val	Val	Lys	Met	Gly	Pro	Phe	Thr	Ser	Gln	Glu	Arg	Ala	Ala	Glu	Ala
210						215					220				

Glu Ala Gln Ala Arg Gly Met Val Arg Ala Val Leu Thr Ala Gly
225 230 235

<210> 1063
<211> 720
<212> DNA
<213> *Neisseria meningitidis*

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<400> 1063
ttgactttaa cccgaaaaac cctttcctc ctcaccgcgg cattcgcat acattcctt 60
cagacggcat ccggcgacgc agtgttcagg gcagaaaaac tgcacgcctc cgccaaccgc 120
agctacaagaa tcggcgaaa acgctacacg cggaaaaacc aagtgcgcga attcacgca 180
accggcaacg cctcgtggta cggcgcagg tttcacggc gcaaaacttc cggcggagaa 240
cgatacgata tgaacgcctt taccggccgccc cacaaccc tgcccatccc cagctatgtg 300
cgcgtaacca ataccaaaaa cggcaaaagc gtcatcgccc gcgtcaacga ccgcggcccc 360
ttccacggca accgcatacat cgacgtatcc aaagccgcgg cgcaaaaatt gggctttgtc 420
aaccaaggga cggcgcacgt caaatcgaa caaatcgccc cgggccaatc cgcaccgtt 480
gccgaaaaaca aagacatctt catcgacttg aatctttcg gtacggaaaca cgaagcacaa 540
gcctatctga accaagccgc ccaaaccctg gcttcatcggg catcaaaccgc gaacctctcg 600
gttgaaaaac gccgttacga atacgtcgtc aaaatgggac cgttgcctc gcaggaacgc 660
ggccggagg cccaagctca ggcgcgcggg atggttcgaaa cggattaaac cgccgggttga 720

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<210> 1064
<211> 239
<212> PRT
<213> *Neisseria meningitidis*

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<400> 1064
Leu Thr Leu Thr Arg Lys Thr Leu Phe Leu Leu Thr Ala Ala Phe Gly
          1           5           10          15

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Ile His Ser Phe Gln Thr Ala Ser Ala Asp Ala Val Val Arg Ala Glu
20 25 30

Tyr Thr Pro Lys Asn Gln Val Ala Glu Phe Thr Gln Thr Gly Asn Ala
50 55 60

Ser Trp Tyr Gly Gly Arg Phe His Gly Arg Lys Thr Ser Gly Gly Glu
 65 70 75 80

Arg Tyr Asp Met Asn Ala Phe Thr Ala Ala His Lys Thr Leu Pro Ile
85 90 95

Pro Ser Tyr Val Arg Val Thr Asn Thr Lys Asn Gly Lys Ser Val Ile
 100 105 110

Val Arg Val Asn Asp Arg Gly Pro Phe His Gly Asn Arg Ile Ile Asp
115 120 125

Val Ser Lys Ala Ala Ala Gln Lys Leu Gly Phe Val Asn Gln Gly Thr
130 135 140

Ala His Val Lys Ile Glu Gln Ile Val Pro Gly Gln Ser Ala Pro Val
145 150 155 160

Ala Glu Asn Lys Asp Ile Phe Ile Asp Leu Lys Ser Phe Gly Thr Glu
165 170 175

His Glu Ala Gln Ala Tyr Leu Asn Gln Ala Ala Gln Asn Leu Ala Ser
180 185 190

Ser Ala Ser Asn Pro Asn Leu Ser Val Glu Lys Arg Arg Tyr Glu Tyr
195 200 205

Val Val Lys Met Gly Pro Phe Ala Ser Gln Glu Arg Ala Ala Glu Ala
210 215 220

Glu Ala Gln Ala Arg Gly Met Val Arg Ala Val Leu Thr Ala Gly
225 230 235

<210> 1065

<211> 371

<212> DNA

<213> Neisseria meningitidis

<400> 1065

atgtcggta tttgccgccc gacacgcgcc aacgctgctt ttccggcttg ggcgcggctg 60
atgattttgt cttgtttgtt gtgttgtgt gcggcggtgc cgtggtcgtc atcgccgtgt 120
ccgtcggtt gggcgagcgc gggggcggaa atgctcagca gtgcggttgc ggcggaggc 180
aagagaaggt gtttgatgtt catatttttc ccttgtaaa tcgtgggttg gaaaatgtgg 240
atattaataa ggtatcaaataaccgtcagc cggcggtcaa taccgcccc accataccgc 300
gcgcctgagc ttccggcttcg gcggcggtt cctgcgaggt aaacggtccc attttgcga 360

cgtattcgta a

371

<210> 1066

<211> 123

<212> PRT

<213> Neisseria meningitidis

<400> 1066

Met Ser Val Ile Leu Pro Pro Thr Arg Ala Asn Ala Ala Phe Ser Ala
1 5 10 15

Trp Ala Arg Leu Met Ile Leu Ser Cys Leu Leu Cys Trp Cys Ala Ala
20 25 30

Cys Pro Trp Ser Ser Ser Pro Cys Pro Ser Trp Trp Ala Ser Ala Gly
35 40 45

Ala Glu Met Leu Ser Ser Ala Val Ala Ala Glu Val Lys Arg Arg Cys

50 55 60
Leu Met Phe Ile Xaa Phe Ala Phe Val Asn Arg Gly Leu Glu Asn Val
65 70 75 80
Asp Ile Asn Lys Val Ser Asn Asn Arg Gln Pro Ala Val Asn Thr Ala
85 90 95
Arg Thr Ile Pro Arg Ala Xaa Ala Ser Ala Ser Ala Ala Arg Ser Cys
100 105 110
Glu Val Asn Gly Pro Ile Leu Thr Thr Tyr Ser
115 120

<210> 1067
<211> 361
<212> DNA

<213> Neisseria meningitidis

<400> 1067
atgtcggtga ttttgcgcgc gacacgcgc aacgctgctt tttcggcttg ggcggcgtg 60
atgattttgt cttgttgtct gtgttgtgt gcggcggtgc cgtggtcgtc atcgccgtgt 120
ccgtcggtgt gggcgagtgc gggggcgaa atgccccatca gtgcgggtgc ggcggcggtc 180
aagagaaggc gtttgaagtt cattttgtct cctgcgaagt atctggtgtt gtttgaagga 240
cgtaaaggcg ggacatcaac cgccgttaa taccggccga accataaccgc ggcgcgtgagc 300
ttcggcctcg gcggcggtt cctgcgaggc aaacggtccc attttgacga cgtattcgta 360
a 361

<210> 1068
<211> 119
<212> PRT
<213> Neisseria meningitidis

<400> 1068
Met Ser Val Ile Leu Pro Pro Thr Arg Ala Asn Ala Ala Phe Ser Ala
1 5 10 15
Trp Ala Arg Leu Met Ile Leu Ser Cys Leu Leu Cys Trp Cys Ala Ala
20 25 30
Cys Pro Trp Ser Ser Ser Pro Cys Pro Ser Trp Trp Ala Ser Ala Gly
35 40 45
Ala Glu Met Pro Ile Ser Ala Val Ala Ala Val Lys Arg Arg Arg
50 55 60
Leu Lys Phe Ile Phe Ala Pro Ala Lys Tyr Leu Xaa Xaa Cys Leu Lys
65 70 75 80
Asp Val Lys Ala Gly His Gln Pro Ala Val Asn Thr Ala Arg Thr Ile
85 90 95
Pro Arg Ala Ala Ser Ala Ser Ala Ala Arg Ser Cys Glu Ala Asn Gly
100 105 110

Pro Ile Leu Thr Thr Tyr Ser
115

<210> 1069
<211> 347
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1069
agttcagacg gcatgccgc cgacaatgcc caaacagaaa gcccatcatg accgcatcca 60
tgtacatcccttggcttg gcactcatct ttggcaacgc ccccttcctc acgaccagac 120
tggcgccgt ggccgcgctc aagcgaaac atttcgaca ccacctgatc gagctggcg 180
caggttcgc gctgaccgccc tctttgcct acatccctcga atcccgtgcg ggagcggta 240
acaatcagggtt tgggagtt tacgccaccg tcgttgcct gtacctcatt ttgccttcc 300
cgtgttcgt gcggcggtat tttggcaca cgcgcaacag ggaataa 347

<210> 1070
<211> 116
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1070
Met Gln Phe Arg Arg His Arg Arg Arg Gln Cys Pro Asn Arg Lys Pro
1 5 10 15

Ile Met Thr Ala Ser Met Tyr Ile Leu Leu Val Leu Ala Leu Ile Phe
20 25 30

Ala Asn Ala Pro Phe Leu Thr Thr Arg Leu Phe Gly Val Ala Ala Leu
35 40 45

Lys Arg Lys His Phe Gly His His Leu Ile Glu Leu Ala Ala Gly Phe
50 55 60

Ala Leu Thr Ala Ser Leu Ala Tyr Ile Leu Glu Ser Arg Ala Gly Ala
65 70 75 80

Val His Asn Gln Gly Trp Glu Phe Tyr Ala Thr Val Val Cys Leu Tyr
85 90 95

Leu Ile Phe Ala Phe Pro Cys Phe Val Arg Arg Tyr Phe Trp His Thr
100 105 110

Arg Asn Arg Glu
115

<210> 1071
<211> 363
<212> DNA
<213> Neisseria meningitidis

<400> 1071
atgccgttcc gcaacgcgtt cagacggcat cgccgccgac aacgcctaaa cagaaagccc 60

accatgaccg catccatgt a catccttttgcgttggcac tcatcttcgc caacgcccc 120
ttcctcacga ccagactgtt cggcggtggcc rcaactcaagc gcaaacattt cgacaccac 180
atgatcgagc tggcgccagg ttgcgcgtt accgcgcgtt tcgcctacat cctsgaatcc 240
cgtgcaggat cggtaaacga tcagggttgg gagtttatg ccacagtcgt ctgcctgtac 300
ctgatttttg cgttccatg ttttgtgtgg cggatattt ggcacacgcg caacaggaa 360
tag 363

<210> 1072

<211> 120

<212> PRT

<213> Neisseria meningitidis

<400> 1072

Met Pro Phe Arg Asn Ala Phe Arg Arg His Arg Arg Arg Gln Arg Leu
1 5 10 15

Asn Arg Lys Pro Thr Met Thr Ala Ser Met Tyr Ile Leu Leu Val Leu
20 25 30

Ala Leu Ile Phe Ala Asn Ala Pro Phe Leu Thr Thr Arg Leu Phe Gly
35 40 45

Val Ala Xaa Leu Lys Arg Lys His Phe Gly His His Met Ile Glu Leu
50 55 60

Ala Ala Gly Phe Ala Leu Thr Ala Val Leu Ala Tyr Ile Leu Glu Ser
65 70 75 80

Arg Ala Gly Ser Val His Asp Gln Gly Trp Glu Phe Tyr Ala Thr Val
85 90 95

Val Cys Leu Tyr Leu Ile Phe Ala Phe Pro Cys Phe Val Trp Arg Tyr
100 105 110

Phe Trp His Thr Arg Asn Arg Glu
115 120

<210> 1073

<211> 363

<212> DNA

<213> Neisseria meningitidis

<400> 1073

atgccgttcc gcaatgcgtt cagacggcat cgccgcgcac aatgcccggaa cagaaagccc 60
gccatgaccg catccatgt a catccttttgcgttggcac tcatcttcgc caacgcccc 120
ttcctcacga ccaagctgtt cggcatcgta ccgcctcaagc gcaaacattt cgacaccac 180
ctgatcgagc tggcgccagg ttgcgcgtt accgcgcgtt tcgcctacat cctsgaatcc 240
cgtgcgggag cggtaaacga tcagggttgg gagtttatg ccacagtcgt ctgcctgtac 300
ctgatttttg cgttccatg ttttgtgtgg cggatattt ggcacacgcg caacaggaa 360
tag 363

<210> 1074

<211> 120

<212> PRT

<213> Neisseria meningitidis

<400> 1074
Met Pro Phe Arg Asn Ala Phe Arg Arg His Arg Arg Arg Gln Cys Pro
1 5 10 15

Asn Arg Lys Pro Ala Met Thr Ala Ser Met Tyr Ile Leu Leu Leu
20 25 30

Ala Leu Ile Phe Ala Asn Ala Pro Phe Leu Thr Thr Lys Leu Phe Gly
35 40 45

Ile Val Pro Leu Lys Arg Lys His Phe Gly His His Leu Ile Glu Leu
50 55 60

Ala Ala Gly Phe Ala Leu Thr Ala Val Leu Ala Tyr Ile Leu Glu Ser
65 70 75 80

Arg Ala Gly Ala Val His Asp Gln Gly Trp Glu Phe Tyr Ala Thr Val
85 90 95

Val Cys Leu Tyr Leu Ile Phe Ala Phe Pro Cys Phe Val Trp Arg Tyr
100 105 110

Phe Trp His Thr Arg Asn Arg Glu
115 120

<210> 1075

<211> 384

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1075
atgcaagtgc cctttttct cgccgtggta ttcaaaaata tgggtttcca caatcgcatc 60
gttcgggcag gcctttcgc agaaaccgca gaagatgcac ttggtcaggt cgatgtcgta 120
acgcttggtg cggcgggtgc cgtcttcgc ttcttccgat tcgatgttga tcgccattgc 180
cggacacacc gcctcgcaca atttacacgc gatgcagcgt tcctctccgt tcggaaaacg 240
gcgttgcgcg tgcagaccgc ggaaacgcac ggattgcggc gttttctctt cggaaaaata 300
aatttgtct ttgcgggcaa aaaagtttt gagcgttacg cccatgcctt tgaccagttc 360
gccaaggaga aaggtttta ctta 384

<210> 1076

<211> 127

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1076
Met Gln Val Ala Phe Phe Leu Ala Val Val Phe Lys Asn Met Gly Phe
1 5 10 15

His Asn Arg Ile Gly Arg Ala Gly Leu Phe Ala Glu Thr Ala Glu Asp
20 25 30

Ala Leu Gly Gln Val Asp Val Val Thr Leu Gly Ala Ala Gly Ala Val

35

40

45

Phe Ala Phe Phe Arg Phe Asp Val Asp Arg His Cys Arg Thr His Arg
50 55 60

Leu Ala Gln Phe Thr Arg Asp Ala Ala Phe Leu Ser Val Arg Lys Thr
65 70 75 80

Ala Leu Arg Val Gln Thr Ala Glu Thr His Gly Leu Arg Arg Phe Leu
85 90 95

Phe Gly Lys Ile Asn Cys Val Phe Ala Gly Lys Lys Val Phe Glu Arg
100 105 110

Tyr Ala His Ala Phe Asp Gln Phe Ala Lys Gln Lys Gly Phe Tyr
115 120 125

<210> 1077

<211> 384

<212> DNA

<213> Neisseria meningitidis

<400> 1077

gtgcaagtcg cctttttct cgccgtggta ttcaaaaata tgggtttcca caatcgcatc 60
agtccggcat gcctttcgc agaaaccgca gaagatgcac ttggtcaggt cgatgtcgta 120
acgcttggtg cggcgctgac cgtcttcacg ttcttccat tcgatgttaa tcgcattgc 180
cgacacact gcctcacaca acttaca'cgc gatacaccgc tcttcggcgt tcggataccg 240
ccgctgcgcg tgcagaccgc ggaaacgcac ggattgcggc gttttctctt cgggaaata 300
aatttgttct ttgcggcga aaaagtttt gagcgttacg cccatacctt ttaccaattc 360
gccaaggcaga aaggtttta ctaa 384

<210> 1078

<211> 127

<212> PRT

<213> Neisseria meningitidis

<400> 1078

Val Gln Val Ala Phe Phe Leu Ala Val Val Phe Lys Asn Met Gly Phe
1 5 10 15

His Asn Arg Ile Ser Arg Ala Cys Leu Phe Ala Glu Thr Ala Glu Asp
20 25 30

Ala Leu Gly Gln Val Asp Val Val Thr Leu Gly Ala Ala Arg Thr Val
35 40 45

Phe Thr Phe Phe Arg Phe Asp Val Asn Arg His Cys Arg Thr His Cys
50 55 60

Leu Thr Gln Leu Thr Arg Asp Thr Pro Leu Phe Ala Val Arg Ile Pro
65 70 75 80

Pro Leu Arg Val Gln Thr Ala Glu Thr His Gly Leu Arg Arg Phe Leu
85 90 95

Phe Gly Glu Ile Asn Cys Val Phe Ala Gly Glu Lys Val Phe Glu Arg
100 105 110

Tyr Ala His Thr Phe Tyr Gln Phe Ala Lys Gln Lys Gly Phe Tyr
115 120 125

<210> 1079

<211> 384

<212> DNA

<213> Neisseria meningitidis

<400> 1079

gtgcaagtgcg cctttttctt cgccgtggta ttcaaaaata tgggtttcca caatcgcatc 60
ggtcggcag gcttcttcgc agaaaccgca gaagatgcac ttggtcaggt cgatgtcgta 120
acgcttggtg cgccgcgtgc cgtcttcgcg ttcttcgat tcgatgttga tcgcccattgc 180
ggggcaaacg gcttcacaca atttacacgc gatgcagcgt tcctcgccgt ttggataacg 240
gcgttgcgcg tgccagacccgc gggaaacgcac ggattgcggc gttttctttt cgggaaaata 300
aatcgtgtct ttgcgggcaa aaaagttttt gaggcgttacg cccatacctt ttaccaattc 360
gccaaaggcaga aagggtttta ctaa 384

<210> 1080

<211> 127

<212> PRT

<213> Neisseria meningitidis

<400> 1080

Val Gln Val Ala Phe Phe Leu Ala Val Val Phe Lys Asn Met Gly Phe
1 5 10 15

His Asn Arg Ile Gly Arg Ala Gly Phe Phe Ala Glu Thr Ala Glu Asp
20 25 30

Ala Leu Gly Gln Val Asp Val Val Thr Leu Gly Ala Ala Arg Ala Val
35 40 45

Phe Ala Phe Phe Arg Phe Asp Val Asp Arg His Cys Gly Ala Asn Gly
50 55 60

Phe Thr Gln Phe Thr Arg Asp Ala Ala Phe Leu Ala Val Trp Ile Thr
65 70 75 80

Ala Leu Arg Val Gln Thr Ala Glu Thr His Gly Leu Arg Arg Phe Leu
85 90 95

Phe Gly Lys Ile Asn Arg Val Phe Ala Gly Lys Lys Val Phe Glu Arg
100 105 110

Tyr Ala His Thr Phe Tyr Gln Phe Ala Lys Gln Lys Gly Phe Tyr
115 120 125

<210> 1081

<211> 1014

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1081

atgaaaaaaaa atttacccgc actggcattt gcaagtatgc tgattttgtc gggctgcgac 60
cggttggaa taggcaaccc gtttccgga aaggaaattt cctgcggaaag cgaagagact 120
aaagagattt tggtaaact ggtccgcgac aatgtcgaag gtgaaaccgt caaaaacttt 180
gacgacgacg cattcaaaga ccaagcattt gccgatatcg gcataatcgca tatccgcaga 240
atggtcgaac gtttggcat aaccgtcgat gaagttcgaa ctaccgagaa aaccgacacg 300
tccagcaaac tcaaatgtga agccgcgtt aaactggacg tgccgcacga tgggtcgat 360
tatgccgtcg ccgcacca acctataaggc aacagccata agaaaacgcc cgacttttt 420
gaaccctact accgcaaaga aggccgtat tatgtaaaaa ctatttctta cagcgtccag 480
ccgacagacg acaaaagcaa aatctttgcc gaactcagtc aggcacacga tatcatccat 540
ccgctcagcg agctgggtc tatggcactg attaaagagc cggtggacaa agcggaaacaa 600
aggaacgaaa aacttgaagc ggcagaagcc accgcgcagg aagcgagggg ggcagaagaa 660
gccccggcgc aggaggcatt gggtcgggag caggaagccg cccgcgtatc cgaatggaa 720
gaacgctaca agctgtcgcg cagcgagttc gagcagttt ggaaaggatt gcctcaaact 780
gtacagaata agctgcaagc ctcgcagaaa acatgaaaaa gcggtatgga caagatctgt 840
gccaacaatg cggaaagccgaa aggtgaaacg ccaaacggca taaaagttag tgagggtggcg 900
tgtaaaaacgg cagaaaccga agcacgcttgaagagctgc acaaccgtaa aaaagccctt 960
atcgacgaaa tggtcaggga agaggacaag aaagaactgc caaagcggct ctga 1014

<210> 1082

<211> 337

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1082

Met Lys Lys Asn Leu Pro Ala Leu Ala Leu Ala Ser Met Leu Ile Leu
1 5 10 15

Ser Gly Cys Asp Arg Leu Gly Ile Gly Asn Pro Phe Ser Gly Lys Glu
20 25 30

Ile Ser Cys Gly Ser Glu Glu Thr Lys Glu Ile Leu Val Lys Leu Val
35 40 45

Arg Asp Asn Val Glu Gly Glu Thr Val Lys Thr Phe Asp Asp Asp Ala
50 55 60

Phe Lys Asp Gln Ala Phe Ala Asp Ile Gly Ile Ser His Ile Arg Arg
65 70 75 80

Met Val Glu Arg Leu Gly Ile Thr Val Asp Glu Val Arg Thr Thr Glu
85 90 95

Lys Thr Asp Thr Ser Ser Lys Leu Lys Cys Glu Ala Ala Leu Lys Leu
100 105 110

Asp Val Pro Asp Asp Val Val Asp Tyr Ala Val Ala Asn Gln Ser
115 120 125

Ile Gly Asn Ser His Lys Lys Thr Pro Asp Phe Phe Glu Pro Tyr Tyr
130 135 140

Arg Lys Glu Gly Ala Tyr Tyr Val Lys Thr Ile Ser Tyr Ser Val Gln

145 150 155 160

Pro Thr Asp Asp Lys Ser Lys Ile Phe Ala Glu Leu Ser Gln Ala His
165 170 175

Asp Ile Ile His Pro Leu Ser Glu Leu Val Ser Met Ala Leu Ile Lys
180 185 190

Glu Pro Leu Asp Lys Ala Lys Gln Arg Asn Glu Lys Leu Glu Ala Ala
195 200 205

Glu Ala Thr Ala Gln Glu Ala Arg Glu Ala Glu Ala Ala Ala Gln
210 215 220

Glu Ala Leu Gly Arg Glu Gln Glu Ala Ala Arg Val Ser Glu Trp Glu
225 230 235 240

Glu Arg Tyr Lys Leu Ser Arg Ser Glu Phe Glu Gln Phe Trp Lys Gly
245 250 255

Leu Pro Gln Thr Val Gln Asn Lys Leu Gln Ala Ser Gln Lys Thr Trp
260 265 270

Lys Ser Gly Met Asp Lys Ile Cys Ala Asn Asn Ala Lys Ala Glu Gly
275 280 285

Glu Thr Pro Asn Gly Ile Lys Val Ser Glu Leu Ala Cys Lys Thr Ala
290 295 300

Glu Thr Glu Ala Arg Leu Glu Glu Leu His Asn Arg Lys Lys Ala Leu
305 310 315 320

Ile Asp Glu Met Val Arg Glu Glu Asp Lys Lys Glu Leu Pro Lys Arg
325 330 335

Leu

<210> 1083
<211> 422
<212> DNA
<213> Neisseria meningitidis

<400> 1083
atggcactga ttaaagagcc gttggacaaa gtgaaacaaa ggaacgaaga acttgaagcg 60
gcagaagaag cggcgccgca ggaggcattg ggtcgggagc aggaagccgc ccgcgtatcc 120
gaatggaaag aacgctacaa gctgtcgccg acgagttcga gcagttctgg aaaggattgc 180
ctcaaaccgt acagaataag ctgcaaccnt cacagaaaac atggaaaagc gggatggata 240
aaatctgtgc caacaatgcg aaagctgaag gtaaaacgcc aaacggcata aaattcagcg 300
aactggcatg caaaaacggcg aaaaccgaag cacgcttgg aagagctgcac aaccgtaaaa 360
aagcccttat cgacgaaatg gycaggaaag cggacamgaa agaactgtca aagcggctst 420
ga 422

<210> 1084
<211> 140

<212> PRT

<213> Neisseria meningitidis

<400> 1084

Met Ala Leu Ile Lys Glu Pro Leu Asp Lys Val Lys Gln Arg Asn Glu
1 5 10 15

Glu Leu Glu Ala Ala Glu Glu Ala Ala Ala Gln Glu Ala Leu Gly Arg
20 25 30

Glu Gln Glu Ala Ala Arg Val Ser Glu Trp Glu Glu Arg Tyr Lys Leu
35 40 45

Ser Arg Xaa Gln Phe Glu Gln Phe Trp Lys Gly Leu Pro Gln Thr Val
50 55 60

Gln Asn Lys Leu Gln Pro Ser Gln Lys Thr Trp Lys Ser Gly Met Asp
65 70 75 80

Lys Ile Cys Ala Asn Asn Ala Lys Ala Glu Gly Lys Thr Pro Asn Gly
85 90 95

Ile Lys Phe Ser Glu Leu Ala Cys Lys Thr Ala Lys Thr Glu Ala Arg
100 105 110

Leu Glu Glu Leu His Asn Arg Lys Lys Ala Leu Ile Asp Glu Met Xaa
115 120 125

Arg Glu Ala Asp Xaa Lys Glu Leu Ser Lys Arg Leu
130 135 140

<210> 1085

<211> 423

<212> DNA

<213> Neisseria meningitidis

<400> 1085

atggcactga ttaaaagagcc gttggacaaa qcgaaacaaa qgaacqaaga acttgaagcg 60
gcagaagaag cggcgcgca ggaggcattg ggtcgggagc aggaagtgcg ccgcgtatcc 120
aatggaaag aacgtacaa gctgtcgcgc agcgagttcg agcagttctg gaaaggattg 180
cctcaaaccg tacagaataa gctgcaagcc tcacagaaaa catggaaaag cgggatggat 240
aaaatctgtg ccaacaatgc gaaagctgaa ggtgaaaacgc caaacggcat aaaattcagc 300
gaactggcat gaaaaacggc gaaaaaccgaa gcacgcttgg aagagctgca caaccgtaaa 360
aaagcccttc tcgacgaaat gcccaggaa gcccacaaga aagaactgcc aaagcggctc 420
tga 423

<210> 1086

<211> 140

<212> PRT

<213> Neisseria meningitidis

<400> 1086

Met Ala Leu Ile Lys Glu Pro Leu Asp Lys Ala Lys Gln Arg Asn Glu
1 5 10 15

Glu Leu Glu Ala Ala Glu Glu Ala Ala Ala Gln Glu Ala Leu Gly Arg
20 25 30

Glu Gln Glu Val Asp Arg Val Ser Glu Trp Glu Glu Arg Tyr Lys Leu
35 40 45

Ser Arg Ser Glu Phe Glu Gln Phe Trp Lys Gly Leu Pro Gln Thr Val
50 55 60

Gln Asn Lys Leu Gln Ala Ser Gln Lys Thr Trp Lys Ser Gly Met Asp
65 70 75 80

Lys Ile Cys Ala Asn Asn Ala Lys Ala Glu Gly Glu Thr Pro Asn Gly
85 90 95

Ile Lys Phe Ser Glu Leu Ala Cys Lys Thr Ala Glu Thr Glu Ala Arg
100 105 110

Leu Glu Glu Leu His Asn Arg Lys Lys Ala Leu Leu Asp Glu Met Ala
115 120 125

Arg Glu Ala Asp Lys Lys Glu Leu Pro Lys Arg Leu
130 135 140

<210> 1087

<211> 477

<212> DNA

<213> Neisseria meningitidis

<400> 1087

gtgcaatccc gataatgatgg tttgcataaaa tttaaacata tatgttccgc agctatggca 60
ctgattaaag agccgttggc caaaagtggaaa caaaggaacg aagaacttgc agcggcagaa 120
gaagcggcgg cgcaggaggc attgggtcg gaggcaggaa cgcggcggt atccgaatgg 180
gaagaacgct acaagctgtc ggcgcagcgg ttcgagcagt tctggaaagg attgcctcaa 240
accgtacaga ataagctgca agcctcacag aaaacatggaa aagcgggat ggataaaaatc 300
tgtgccaaca atgcgaaagc tgaaggtaaa acgcacaaacg gcataaaaatt cagcgaactg 360
gcatgaaaaa cggcgaaaaac cgaaggcacgc ttggaaagagc tgcacaacccg taaaaaagcc 420
cttatcgacg aaatggccag ggaagcggac aagaaagaac tgtcaaagcg gctctga 477

<210> 1088

<211> 158

<212> PRT

<213> Neisseria meningitidis

<400> 1088

Val Gln Ser Arg Tyr Asp Gly Leu His Lys Phe Lys His Ile Cys Ser
1 5 10 15

Ala Ala Met Ala Leu Ile Lys Glu Pro Leu Asp Lys Val Lys Gln Arg
20 25 30

Asn Glu Glu Leu Glu Ala Ala Glu Glu Ala Ala Ala Gln Glu Ala Leu
35 40 45

Gly Arg Glu Gln Glu Ala Ala Arg Val Ser Glu Trp Glu Glu Arg Tyr

50	55	60	
Lys Leu Ser Arg Ser Glu Phe Glu Gln Phe Trp Lys Gly Leu Pro Gln			
65	70	75	80
Thr Val Gln Asn Lys Leu Gln Ala Ser Gln Lys Thr Trp Lys Ser Gly			
85	90	95	
Met Asp Lys Ile Cys Ala Asn Asn Ala Lys Ala Glu Gly Lys Thr Pro			
100	105	110	
Asn Gly Ile Lys Phe Ser Glu Leu Ala Cys Lys Thr Ala Lys Thr Glu			
115	120	125	
Ala Arg Leu Glu Glu Leu His Asn Arg Lys Lys Ala Leu Ile Asp Glu			
130	135	140	
Met Ala Arg Glu Ala Asp Lys Lys Glu Leu Ser Lys Arg Leu			
145	150	155	
<210> 1089			
<211> 477			
<212> DNA			
<213> Neisseria meningitidis			
<400> 1089			
gtgcaatccc gataatgatgg tttgcataaa tttaaacata tatgttccgc agctatggca 60			
ctgattaaag agccgttgg acaaaggcggaa caaaggAACG aagaacttga agcgccagaa 120			
gaagcggcgg cgccaggaggc attgggtcgg gagcaaggcgt atccgaatgg 180			
gaagaacgct acaagctgtc ggcgcggcgg ttcgagcagt tctggaaagg attgcctcaa 240			
accgtacaga ataagctgca agcctcacag aaaacatggaa aaagcgggat ggataaaaatc 300			
tgtgccaaca atgcgaaaagc tgaagggtgaa acgcacaaacg gcataaaaatt cagcgaactg 360			
gcatgaaaaa cggcggaaac cgaaggcggc ttggaagagc tgcacaacccg taaaaaagcc 420			
cttctcgacg aaatggccag ggaaggcggac aagaaagaac tgccaaacccg gctctga 477			
<210> 1090			
<211> 158			
<212> PRT			
<213> Neisseria meningitidis			
<400> 1090			
Val Gln Ser Arg Tyr Asp Gly Leu His Lys Phe Lys His Ile Cys Ser			
1	5	10	15
Ala Ala Met Ala Leu Ile Lys Glu Pro Leu Asp Lys Ala Lys Gln Arg			
20	25	30	
Asn Glu Glu Leu Glu Ala Ala Glu Glu Ala Ala Ala Gln Glu Ala Leu			
35	40	45	
Gly Arg Glu Gln Glu Val Asp Arg Val Ser Glu Trp Glu Glu Arg Tyr			
50	55	60	
Lys Leu Ser Arg Ser Glu Phe Glu Gln Phe Trp Lys Gly Leu Pro Gln			
65	70	75	80

Thr Val Gln Asn Lys Leu Gln Ala Ser Gln Lys Thr Trp Lys Ser Gly
85 90 95

Met Asp Lys Ile Cys Ala Asn Asn Ala Lys Ala Glu Gly Glu Thr Pro
100 105 110

Asn Gly Ile Lys Phe Ser Glu Leu Ala Cys Lys Thr Ala Glu Thr Glu
115 120 125

Ala Arg Leu Glu Glu Leu His Asn Arg Lys Lys Ala Leu Leu Asp Glu
130 135 140

Met Ala Arg Glu Ala Asp Lys Lys Glu Leu Pro Lys Arg Leu
145 150 155

<210> 1091

<211> 366

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1091

atggtttggc gtgtgaattt cgccggcaacg gcggcgctga ttttttcgtc cagcccttgg 60
atttgggcgg tgggtgtgggt gtgggtcgccgg tcggctttt cctgcaaacc ttgcgccagc 120
cttgcacgcgt ccagtgcgcc ggcgttggcg gtttcgcgt gggactttat ccgaaacacg 180
gcttcgccc aagggtcggc ggctttgatg cacagttta aaaccaggc tttggggcgg 240
ttttctgcgc cgcccggtgc cattttgctg tccaatcgcg gggtaaaaaa accgttgtcg 300
tttaagtgcgc cgtccgtcca agtcgatacg agcgcgttc tttgccttc attgcggct 360
tcgtaa 366

<210> 1092

<211> 121

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1092

Met Val Trp Arg Val Asn Cys Ala Ala Thr Ala Ala Leu Ile Phe Ser
1 5 10 15

Ser Ser Pro Trp Ile Trp Ala Val Val Trp Val Trp Ser Arg Ser Ala
20 25 30

Phe Ser Cys Lys Pro Cys Ala Ser Leu Asp Ala Ser Ser Ala Pro Ala
35 40 45

Leu Ala Val Ser Pro Trp Asp Phe Ile Arg Asn Thr Ala Ser Pro Lys
50 55 60

Val Ser Ala Ala Leu Met His Ser Phe Lys Thr Arg Ala Leu Gly Arg
65 70 75 80

Phe Ser Ala Pro Pro Val Ala Ile Leu Leu Ser Asn Arg Gly Val Lys
85 90 95

Lys Pro Leu Ser Phe Lys Ser Pro Ser Val Gln Val Asp Thr Ser Ala

100

105

110

Leu Leu Cys Leu Ser Leu Arg Ser Ser
115 120

<210> 1093

<211> 363

<212> DNA

<213> Neisseria meningitidis

<400> 1093

atggtttggc gtgtgaattt cgccggcaacg gcgggtgctga ttttttcgtc cagcccttgg 60
atttgggcgg cgggtgtgggt gtgggtctcggt tcggcgtttgt ctgcacaaacc ttgcgccacg 120
tgccccgcgtc cagcgcctgc gttgatgggt tcgcccgtggg acttttatcca aaacacggct 180
tcgccccaaagg tgcggccgc tttgatgcac agttttaaaa ccagggcttt ggggcgggttt 240
tcgtcgccgc ctgtcgccat tttgatgtcc gagcgcgggg taaaaaagcc gttgtcggtt 300
aaattttcgtt ccgtccaagt cgatacggac gcgttctct gccttcgtt gcggcttcg 360
taa 363

<210> 1094

<211> 120

<212> PRT

<213> Neisseria meningitidis

<400> 1094

Met Val Trp Arg Val Asn Cys Ala Ala Thr Ala Val Leu Ile Phe Ser
1 5 10 15

Ser Ser Pro Trp Ile Trp Ala Ala Val Trp Val Trp Ser Arg Ser Ala
20 25 30

Leu Ser Cys Lys Pro Cys Ala Thr Cys Pro Arg Pro Ala Pro Ala Leu
35 40 45

Met Val Ser Pro Trp Asp Phe Ile Gln Asn Thr Ala Ser Pro Lys Val
50 55 60

Ser Ala Ala Leu Met His Ser Phe Lys Thr Arg Ala Leu Gly Arg Phe
65 70 75 80

Ser Ser Pro Pro Val Ala Ile Leu Leu Ser Glu Arg Gly Val Lys Lys
85 90 95

Pro Leu Ser Phe Lys Phe Ser Ser Val Gln Val Asp Thr Ser Ala Leu
100 105 110

Leu Cys Leu Ser Leu Arg Ser Ser
115 120

<210> 1095

<211> 366

<212> DNA

<213> Neisseria meningitidis

<400> 1095

atggttggc gtgtgaattg cgccggcaacg gcgggtgcgtga tttttcgctc cagcccttgg 60
atttggcgg cggtgtgggt gtgggcgcgg tctgcttgcgtt cttggagggtt ttgcgccagc 120
gtgcccgcgt ccagcgcgcgc ggcgttgacg gtttcgcgtt gggactttat ccagaacacg 180
gcttcgcca aggtgtcggc ggcttgatg cacagttta aaaccaggc tttggggcgg 240
ttttcgtcgc cgcctgtcgc cattttgtcg tccggcgcg gggtaaaaaa gccgttgtcg 300
tttaaatttt cgtccgtcca agtcgatacg agcgcgcgttc tctgccttc gttgtggct 360
tcgtaa 366

<210> 1096

<211> 121

<212> PRT

<213> Neisseria meningitidis

<400> 1096

Met Val Trp Arg Val Asn Cys Ala Ala Thr Ala Val Leu Ile Phe Ser
1 5 10 15

Ser Ser Pro Trp Ile Trp Ala Ala Val Trp Val Trp Ala Arg Ser Ala
20 25 30

Leu Ser Trp Arg Phe Cys Ala Ser Val Pro Ala Ser Ser Ala Pro Ala
35 40 45

Leu Thr Val Ser Pro Trp Asp Phe Ile Gln Asn Thr Ala Ser Pro Lys
50 55 60

Val Ser Ala Ala Leu Met His Ser Phe Lys Thr Arg Ala Leu Gly Arg
65 70 75 80

Phe Ser Ser Pro Pro Val Ala Ile Leu Leu Ser Gly Arg Gly Val Lys
85 90 95

Lys Pro Leu Ser Phe Lys Phe Ser Ser Val Gln Val Asp Thr Ser Ala
100 105 110

Leu Leu Cys Leu Ser Leu Trp Ser Ser
115 120

<210> 1097

<211> 423

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1097

atgaataaaa accgcaaatt actgcttgcc gcactgctgc tgactgcctt tgccgccttc 60
aagctcggtt tggtcaatg gtggcaggcg cagcagccgc aagccgtggc ggcgcaatgc 120
gatttgaccg agggttgcac gctgcccggc ggaagccgtg tccgcgccgc cgccgtttca 180
accaaaaaaaaac cgtttgatat ttatatcgaa cacgcgcggc cggcacqga acaggtcagc 240
atcagcttca gatatggaaaa tatggatatg ggtttcaacc gctatatgtt cgagcggcaa 300
ccgtcgaaaa cttggcaggc agcacgcattc cgcctgcccgc tctgtgtcgaa aggccaggcgc 360
gattttacgg cggacattac aatcgccagc cggacatttc agacggcatt taccgcccggaa 420
taa 423

<210> 1098
<211> 140
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1098

Met	Asn	Lys	Asn	Arg	Lys	Leu	Leu	Leu	Ala	Ala	Leu	Leu	Leu	Thr	Ala
1					5				10					15	

Phe Ala Ala Phe Lys Leu Val Leu Leu Gln Trp Trp Gln Ala Gln Gln

		20			25							30			
--	--	----	--	--	----	--	--	--	--	--	--	----	--	--	--

Pro Gln Ala Val Ala Ala Gln Cys Asp Leu Thr Glu Gly Cys Thr Leu

		35			40				45						
--	--	----	--	--	----	--	--	--	----	--	--	--	--	--	--

Pro Asp Gly Ser Arg Val Arg Ala Ala Ala Val Ser Thr Lys Lys Pro

		50			55				60						
--	--	----	--	--	----	--	--	--	----	--	--	--	--	--	--

Phe Asp Ile Tyr Ile Glu His Ala Pro Ala Gly Thr Glu Gln Val Ser

		65			70				75			80			
--	--	----	--	--	----	--	--	--	----	--	--	----	--	--	--

Ile Ser Phe Ser Met Lys Asn Met Asp Met Gly Phe Asn Arg Tyr Met

		85			90				95						
--	--	----	--	--	----	--	--	--	----	--	--	--	--	--	--

Phe Glu Arg Gln Pro Ser Gly Thr Trp Gln Ala Ala Arg Ile Arg Leu

		100			105				110						
--	--	-----	--	--	-----	--	--	--	-----	--	--	--	--	--	--

Pro Val Cys Val Glu Gly Arg Arg Asp Phe Thr Ala Asp Ile Thr Ile

		115			120				125						
--	--	-----	--	--	-----	--	--	--	-----	--	--	--	--	--	--

Gly Ser Arg Thr Phe Gln Thr Ala Phe Thr Ala Glu

		130			135				140						
--	--	-----	--	--	-----	--	--	--	-----	--	--	--	--	--	--

<210> 1099
<211> 422
<212> DNA
<213> Neisseria meningitidis

<400> 1099

atgaataaaa accgtaaatt actgcttgcc gcactgctgc tgattgcctt tgccgccgtc 60
aagctcgtt tggcaatg gtggcaggcg cacagccgca agctgtggcg gcgcaatgcg 120
atttgaccga gggttgcacg ctgccggacg gaagccgcgt ccgcgccccc gccgttcaa 180
ccaaaaaacc gtttgcattt tatatcgAAC acgcgcggc cggcacggaa caggtcagca 240
tcagcttcAG tataaaaat atggatatgg gtttcaaccg ctatatgttc gagcggcaac 300
cgtcggggac ttggcaggca gtacgcattcc gcctgccccat ctgtgtcgaa ggcaggcg 360
attttacggc ggacattaca atcggcagtc ggacatttca gacggcattt accggcaat 420
aa 422

<210> 1100
<211> 140
<212> PRT
<213> Neisseria meningitidis

<400> 1100

Met Asn Lys Asn Arg Lys Leu Leu Leu Ala Ala Leu Leu Leu Ile Ala
1 5 10 15

Phe Ala Ala Val Lys Leu Val Leu Leu Gln Trp Trp Gln Ala Xaa Gln
20 25 30

Pro Gln Ala Val Ala Ala Gln Cys Asp Leu Thr Glu Gly Cys Thr Leu
35 40 45

Pro Asp Gly Ser Arg Val Arg Ala Ala Ala Val Ser Thr Lys Lys Pro
50 55 60

Phe Asp Ile Tyr Ile Glu His Ala Pro Ala Gly Thr Glu Gln Val Ser
65 70 75 80

Ile Ser Phe Ser Met Lys Asn Met Asp Met Gly Phe Asn Arg Tyr Met
85 90 95

Phe Glu Arg Gln Pro Ser Gly Thr Trp Gln Ala Val Arg Ile Arg Leu
100 105 110

Pro Ile Cys Val Glu Gly Arg Arg Asp Phe Thr Ala Asp Ile Thr Ile
115 120 125

Gly Ser Arg Thr Phe Gln Thr Ala Phe Thr Ala Glu
130 135 140

<210> 1101

<211> 423

<212> DNA

<213> Neisseria meningitidis

<400> 1101

atgaataaaaa accgtaaatt actgcttgcc gcactgctgc tgattgcctt tgccggcgtc 60
aagctcgtt tggcaatg gtggcaggcg cagcagccgc aagctgtggc ggcgaatgc 120
gatttgcacc agggttgcac gctgccggac ggaagccgcg tccgcgcgc cgccgtttca 180
accaaaaaac cgtttgcata ttatatcgaa cacgcgcggc ccggcacgga acaggtcagc 240
atcagcttca gtatggaaaa tatggatatg gtttcaacc gctatatgtt cgagcggcaa 300
ccgtcgaaaa cttggcaggc agtacgcattc cgcctgcca tctgtgtcga aggccaggcgc 360
gattttacgg cggacattac aatcgccagc cggacatttc agacggcatt taccggcggaa 420
taa 423

<210> 1102

<211> 140

<212> PRT

<213> Neisseria meningitidis

<400> 1102

Met Asn Lys Asn Arg Lys Leu Leu Leu Ala Ala Leu Leu Leu Ile Ala
1 5 10 15

Phe Ala Ala Val Lys Leu Val Leu Leu Gln Trp Trp Gln Ala Gln Gln
20 25 30

Pro Gln Ala Val Ala Ala Gln Cys Asp Leu Thr Glu Gly Cys Thr Leu

35

40

45

Pro Asp Gly Ser Arg Val Arg Ala Ala Ala Val Ser Thr Lys Lys Pro
50 55 60

Phe Asp Ile Tyr Ile Glu His Ala Pro Ala Gly Thr Glu Gln Val Ser
65 70 75 80

Ile Ser Phe Ser Met Lys Asn Met Asp Met Gly Phe Asn Arg Tyr Met
85 90 95

Phe Glu Arg Gln Pro Ser Gly Thr Trp Gln Ala Val Arg Ile Arg Leu
100 105 110

Pro Ile Cys Val Glu Gly Arg Arg Asp Phe Thr Ala Asp Ile Thr Ile
115 120 125

Gly Ser Arg Thr Phe Gln Thr Ala Phe Thr Ala Glu
130 135 140

<210> 1103

<211> 573

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1103

atgttcaggc cgccggatggc gaggatttgg gcgacgggggg taacgttgtg tatggtcagt 60
ccgtgtccgg cgttgacgac caagccccaaa tcgcggcgca aatgcgcgc 120
cgctcgaact gcctgatttt ttcggcgtgg ctttgtcgct cggcatatgc gccgggtgtgc 180
agctcgacaa cggggcgcgc gacatcacgg gcggcttggta ttgcctgtc gtcggcatcg 240
ataaaacaagg acacgcgtat gcccgcgtcg gtcaggattt tggcgaattt ggcgattttt 300
tcctgttgcg ccaatacgtc caaaccgcct tcggcgtgta ttcctgccc ttttcaggc 360
acgatgcaca cgttcccg catcacttta agcgcgtttt cgagcatttc ttccgtcaac 420
gccatttcaa gggtttaggcg cgtgcggatg gcgttttga cggcaaatac atccgcgtct 480
ttgtatgtggc ggccggcttc gcgcagggtgc atggtaatca ggtctgcacc gtgcgtttcg 540
gcaaccatgt ccgcctccac ggggtggta taa 573

<210> 1104

<211> 190

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1104

Met Phe Ser Ser Arg Met Ala Arg Ile Trp Ala Thr Gly Val Thr Leu
1 5 10 15

Cys Met Val Ser Pro Cys Pro Ala Leu Thr Thr Lys Pro Lys Ser Pro
20 25 30

Ala Lys Cys Ala Pro Phe Trp Met Arg Ser Asn Cys Leu Ile Cys Ser
35 40 45

Ala Trp Leu Cys Ala Ser Ala Tyr Ala Pro Val Cys Ser Ser Thr Thr
50 55 60

Gly Ala Pro Thr Ser Arg Ala Ala Trp Ile Cys Leu Ser Ser Ala Ser
65 70 75 80

Ile Asn Lys Asp Thr Arg Met Pro Ala Ser Val Arg Ile Leu Ala Asn
85 90 95

Ser Ala Ile Phe Ser Cys Cys Ala Asn Thr Ser Lys Pro Pro Ser Val
100 105 110

Val Ile Ser Cys Arg Phe Ser Gly Thr Met His Thr Ser Ser Gly Ile
115 120 125

Thr Leu Ser Ala Phe Ser Ser Ile Ser Ser Val Asn Ala Ile Ser Arg
130 135 140

Phe Arg Arg Val Arg Met Ala Phe Leu Thr Ala Asn Thr Ser Ala Ser
145 150 155 160

Leu Met Trp Arg Arg Ser Ser Arg Arg Cys Met Val Ile Arg Ser Ala
165 170 175

Pro Cys Val Ser Ala Thr Ser Ala Ala Ser Thr Gly Leu Gly
180 185 190

<210> 1105

<211> 573

<212> DNA

<213> Neisseria meningitidis

<400> 1105

awgttcagtt cgcggatggc gaggatttgg gcgtatgggg taacgttgtg tatggtcagt 60
ccgtgtccgg cggtgacgac caagccccaa tcgcggcgca aatgcgcgcg gttttggatg 120
cgctcgaact gcctgatttg ttccggcggtt ctgcgcgcgt cggcatacgc gcctgtgtgc 180
agctcgacaa cgggcgcgccc gacatcacgg gccggcttggaa ttgcctgtc gtccgcac 240
ataaaacaag acacgcgtat gcctgcgtcg gtcaggattt tggtaacc ggcgattttt 300
tcctgttgcg ccaatacgtc caaaccgcct tcggcgtgta tttcctgacg ttttcaggc 360
acgatgcaca cgtctccgg catcaatttc aaagcggtt ccaacatttc ttccgtcaac 420
gccatttcaa gggtcaggcg cgtgcggatg gcgttttga cggcaaacac gtccgcgtct 480
ttgatgtgca ggcggcttc gcgcagggtc atggtaatca aatccgcacc gtgcgttcg 540
gcaaccagtg ccgcctccac gggctggga taa 573

<210> 1106

<211> 190

<212> PRT

<213> Neisseria meningitidis

<400> 1106

Xaa Phe Ser Ser Arg Met Ala Arg Ile Trp Ala Met Gly Val Thr Leu
1 5 10 15

Cys Met Val Ser Pro Cys Pro Ala Leu Thr Thr Lys Pro Lys Ser Pro
20 25 30

Ala Lys Cys Ala Pro Phe Trp Met Arg Ser Asn Cys Leu Ile Cys Ser
35 40 45

Ala Trp Leu Arg Ala Ser Ala Tyr Ala Pro Val Cys Ser Ser Thr Thr
50 55 60

Gly Ala Pro Thr Ser Arg Ala Ala Trp Ile Cys Leu Ser Ser Ala Ser
65 70 75 80

Ile Asn Lys Asp Thr Arg Met Pro Ala Ser Val Arg Ile Leu Val Asn
85 90 95

Pro Ala Ile Phe Ser Cys Cys Ala Asn Thr Ser Lys Pro Pro Ser Val
100 105 110

Val Ile Ser Xaa Arg Phe Ser Gly Thr Met His Thr Ser Ser Gly Ile
115 120 125

Thr Phe Lys Ala Phe Ser Asn Ile Ser Ser Val Asn Ala Ile Ser Arg
130 135 140

Phe Arg Arg Val Arg Met Ala Phe Leu Thr Ala Asn Thr Ser Ala Ser
145 150 155 160

Leu Met Trp Arg Arg Ser Ser Arg Arg Cys Met Val Ile Lys Ser Ala
165 170 175

Pro Cys Val Ser Ala Thr Ser Ala Ala Ser Thr Gly Leu Gly
180 185 190

<210> 1107

<211> 573

<212> DNA

<213> Neisseria meningitidis

<400> 1107

atgttcagtt cgcggatggc gaggatttgg gcgatggggg taacgttgt tatggtcagt 60
ccgtgtccgg cgttgacgac caagccccaa tcgctggcaa aatgcgcgcc gttttggatg 120
cgctcgaact gcctgatttg ttcggcggtt ctgcgcgcgt cggcatacgc gcctgtgtgc 180
agctcgacaa cggggcgccc gacatcacgg gcccgttggg tttgcctgtc gtccgcac 240
ataaaacaagg acacgcgtat gcccgcgtcg gtcaggattt tggtaatttgc ggcaattttg 300
tcttgttgcg ccaatacgtc caagccgcct tcggcgtgtga tttcctgacg ttttccggc 360
acgatgcaca cgtcttccgg catcacttta agcgcgtttt cgagcatttc ttccgtcaac 420
gccatttcaa gttcaggcg cgtgcggatg gcgttttga cagcaaacac gtccgcgtct 480
ttgatgtgca ggcggtcttc ggcgcagggtgc atggtaatca gtcggcacc gtgcgtttcg 540
gcaaccagtgc cgcctccac ggggctggga taa 573

<210> 1108

<211> 189

<212> PRT

<213> Neisseria meningitidis

<400> 1108

Met Phe Ser Ser Arg Met Ala Arg Ile Trp Ala Met Gly Val Thr Leu
1 5 10 15

Cys Met Val Ser Pro Cys Pro Ala Leu Thr Thr Lys Pro Lys Ser Leu

20

25

30

Ala Lys Cys Ala Pro Phe Trp Met Arg Ser Asn Cys Leu Ile Cys Ser
35 40 45

Ala Trp Leu Arg Ala Ser Ala Tyr Ala Pro Val Cys Ser Ser Thr Thr
50 55 60

Gly Ala Pro Thr Ser Arg Ala Ala Trp Ile Cys Leu Ser Ser Ala Ser
65 70 75 80

Ile Asn Lys Asp Thr Arg Met Pro Ala Ser Val Arg Ile Leu Val Asn
85 90 95

Ser Ala Ile Leu Ser Cys Cys Ala Asn Thr Ser Lys Pro Pro Ser Val
100 105 110

Val Ile Ser Arg Phe Ser Gly Thr Met His Thr Ser Ser Gly Ile Thr
115 120 125

Leu Ser Ala Phe Ser Ser Ile Ser Ser Val Asn Ala Ile Ser Arg Phe
130 135 140

Arg Arg Val Arg Met Ala Phe Leu Thr Ala Asn Thr Ser Ala Ser Leu
145 150 155 160

Met Trp Arg Arg Ser Ser Arg Arg Cys Met Val Ile Arg Ser Ala Pro
165 170 175

Cys Val Ser Ala Thr Ser Ala Ala Ser Thr Gly Leu Gly
180 185

<210> 1109

<211> 1113

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1109

atgactgcaa aggaagaact gttcgcatgg ctgcgccata tgaacaaaaaa caaaggttcc 60
gacctgtttg tgacgaccctt tttcccgccc gctatgaagc tggacggcaa aatcacccgc 120
atcacggacg aaccgctgac ggcggaaaaaa tggatggaaa tcgccttttc gattatgagt 180
gcgaagcagg cggaaattttt ttcatcgacc aacgagtgc aatcgccat cagcctgccc 240
gacaccagcc gcttcggcgt caatgcgtt atacagcgcgt gtgcgacggc gttggatttc 300
cgcgcgatta ccagcaagat tcccaagttt gaaaggctga acctgcgcgc ggccttgaag 360
gatgttgccgc tgaaaaaaacg cgggctgggtt attttgcgtt gcggcaccgg ctcgggcaaa 420
tcgacttcgc tcgcctcgat tatcgactac cgcaatggaaa attcggttgc acacatcatc 480
accatcgaaatcccgatcgaa gtttgtccac gaacacaaaaa actgcgttcatcat tacccagcgc 540
gagggtcgccgc tggacacggaa aactggatg gcccgttga aaaatacgct gcgtcaggcg 600
ccggatgtga tccttatcgcc cggaaatccgc gaccgtgaaa caatggacta cgcgcgcgc 660
tttgcgcggaa cggggcattt gtgtatggcg acgctgcacg ccaacagcac caatcaggcg 720
ctcgaccgcac tcataactt cttcccgag gagcggcgacg aacaattgtt gacggatttg 780
tcgctcaacc ttccaggcgat tatttcgcaaa cgcctcgatc cgccgacggc cggcaaggcg 840
agggtggccgg cagtcgaggt gctgctcaat tcgcccgttga ttccggatgtt gattcacaac 900
gcacacatccatc atgaaatccaa agaagtgtatg aaaaaatccaa ctaccctggg tatgcagacc 960
ttcgaccaac acctttacca attgtatgaa aaaggcgaga ttcccttgca ggatgccttg 1020
aaaaatgccccattccgcaca tgatttgcgtt tgccgtac agttgcgcag cccgcaggca 1080

caaagttccg accccgattt ggaactgctc tga

1113

<210> 1110
<211> 370
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1110
Met Thr Ala Lys Glu Glu Leu Phe Ala Trp Leu Arg His Met Asn Lys
1 5 10 15
Asn Lys Gly Ser Asp Leu Phe Val Thr Thr His Phe Pro Pro Ala Met
20 25 30
Lys Leu Asp Gly Lys Ile Thr Arg Ile Thr Asp Glu Pro Leu Thr Ala
35 40 45
Glu Lys Cys Met Glu Ile Ala Phe Ser Ile Met Ser Ala Lys Gln Ala
50 55 60
Glu Glu Phe Ser Ser Thr Asn Glu Cys Asn Phe Ala Ile Ser Leu Pro
65 70 75 80
Asp Thr Ser Arg Phe Arg Val Asn Ala Met Ile Gln Arg Gly Ala Thr
85 90 95
Ala Leu Val Phe Arg Ala Ile Thr Ser Lys Ile Pro Lys Phe Glu Ser
100 105 110
Leu Asn Leu Pro Pro Ala Leu Lys Asp Val Ala Leu Lys Lys Arg Gly
115 120 125
Leu Val Ile Phe Val Gly Gly Thr Gly Ser Gly Lys Ser Thr Ser Leu
130 135 140
Ala Ser Leu Ile Asp Tyr Arg Asn Glu Asn Ser Phe Gly His Ile Ile
145 150 155 160
Thr Ile Glu Asp Pro Ile Glu Phe Val His Glu His Lys Asn Cys Ile
165 170 175
Ile Thr Gln Arg Glu Val Gly Val Asp Thr Glu Asn Trp Met Ala Ala
180 185 190
Leu Lys Asn Thr Leu Arg Gln Ala Pro Asp Val Ile Leu Ile Gly Glu
195 200 205
Ile Arg Asp Arg Glu Thr Met Asp Tyr Ala Ile Ala Phe Ala Glu Thr
210 215 220
Gly His Leu Cys Met Ala Thr Leu His Ala Asn Ser Thr Asn Gln Ala
225 230 235 240
Leu Asp Arg Ile Ile Asn Phe Phe Pro Glu Glu Arg Arg Glu Gln Leu
245 250 255

Leu Thr Asp Leu Ser Leu Asn Leu Gln Ala Phe Ile Ser Gln Arg Leu
260 265 270

Val Pro Arg Asp Gly Gly Lys Gly Arg Val Ala Ala Val Glu Val Leu
275 280 285

Leu Asn Ser Pro Leu Ile Ser Glu Leu Ile His Asn Gly Asn Ile His
290 295 300

Glu Ile Lys Glu Val Met Lys Lys Ser Thr Thr Leu Gly Met Gln Thr
305 310 315 320

Phe Asp Gln His Leu Tyr Gln Leu Tyr Glu Lys Gly Glu Ile Ser Leu
325 330 335

Gln Asp Ala Leu Lys Asn Ala Asp Ser Ala His Asp Leu Arg Leu Ala
340 345 350

Val Gln Leu Arg Ser Arg Arg Ala Gln Ser Ser Asp Pro Asp Leu Glu
355 360 365

Leu Leu
.370

<210> 1111
<211> 1113
<212> DNA
<213> Neisseria meningitidis

<400> 1111
atgaccgcaa aggaagaact gttcgcatgg ctgcgccata tgawccaaaa caaaggttcc 60
gacctgttcg tgacaaccca tttcccgccc gcaatgaagc tggacggcaa aatcacccgc 120
atcacggacg aaccgctgac ggcggaaaaaa tgtatggaaa tcgcctttc gattatgagt 180
gcgaagcagg cggagaatt ttcatcgacc aacgagtgc aacctcgccat cagcctgccc 240
gacaccagcc gcttccgcgt caatgcgatg atacagcgcg ggcgcacggc gttggatttc 300
cgtacgatta ccagcaagat tcccaagttt gaaaggctga acctgcgcg agtcttgaag 360
gatgtcgccg taaaaaaacg cgggctgggt attttgtcg gggcaccgg ctgggtaaa 420
tcgacttcgc ttgcctcgct tatcgactac cgcaatgaaa attcggttcgg acacatcatc 480
accatcgaa acccgatcga gtttgccac gaacacaaaa actgcattcat cacccagcgc 540
gaggctggcg tggatacgg aaactggatg ggcgcgttga aaaacacgct gcgtcaggcg 600
cctgatgtca tccttatcg cgaaatccgt gaccgcggaa caatggacta cgccattgcc 660
tttgcgaaaa cggggcattt gtgtatggcg acgctgcacg ccaacagcac caatcaggca 720
ctcgaccgca tcataactt tttccccgag gagcggcgcg aacaattgtc gacggatttg 780
tcgctcaacc ttcaggcggtt tatttcgcaa cgcctcggtc cgcgagacgg cggcaagggc 840
agggtggcg cagtcgaggt gctgctaat tcgccccgtga tttcgagtt gattcacaac 900
ggcaacatcc atgaaatcaa agaagtgtg aaaaaatcca ctaccctggg tatgcagacc 960
ttcgatcaac acctttacca attgtatgaa aaaggcgata tttccctgca agaagcattg 1020
aaaaatgccc attccgcaca cgatttgcgt ttggcggtac agttgcgcag cgcgcgcgc 1080
caaagtttyca gccccgattt ggnactgctc tga 1113

<210> 1112
<211> 370
<212> PRT
<213> Neisseria meningitidis

<400> 1112

Met Thr Ala Lys Glu Glu Leu Phe Ala Trp Leu Arg His Met Xaa Gln
1 5 10 15

Asn Lys Gly Ser Asp Leu Phe Val Thr Thr His Phe Pro Pro Ala Met
20 25 30

Lys Leu Asp Gly Lys Ile Thr Arg Ile Thr Asp Glu Pro Leu Thr Ala
35 40 45

Glu Lys Cys Met Glu Ile Ala Phe Ser Ile Met Ser Ala Lys Gln Ala
50 55 60

Glu Glu Phe Ser Ser Thr Asn Glu Cys Asn Phe Ala Ile Ser Leu Pro
65 70 75 80

Asp Thr Ser Arg Phe Arg Val Asn Ala Met Ile Gln Arg Gly Ala Thr
85 90 95

Ala Leu Val Phe Arg Thr Ile Thr Ser Lys Ile Pro Lys Phe Glu Ser
100 105 110

Leu Asn Leu Pro Pro Val Leu Lys Asp Val Ala Leu Lys Lys Arg Gly
115 120 125

Leu Val Ile Phe Val Gly Gly Thr Gly Ser Gly Lys Ser Thr Ser Leu
130 135 140

Ala Ser Leu Ile Asp Tyr Arg Asn Glu Asn Ser Phe Gly His Ile Ile
145 150 155 160

Thr Ile Glu Asp Pro Ile Glu Phe Val His Glu His Lys Asn Cys Ile
165 170 175

Ile Thr Gln Arg Glu Val Gly Val Asp Thr Glu Asn Trp Met Ala Ala
180 185 190

Leu Lys Asn Thr Leu Arg Gln Ala Pro Asp Val Ile Leu Ile Gly Glu
195 200 205

Ile Arg Asp Arg Glu Thr Met Asp Tyr Ala Ile Ala Phe Ala Glu Thr
210 215 220

Gly His Leu Cys Met Ala Thr Leu His Ala Asn Ser Thr Asn Gln Ala
225 230 235 240

Leu Asp Arg Ile Ile Asn Phe Phe Pro Glu Glu Arg Arg Glu Gln Leu
245 250 255

Leu Thr Asp Leu Ser Leu Asn Leu Gln Ala Phe Ile Ser Gln Arg Leu
260 265 270

Val Pro Arg Asp Gly Gly Lys Gly Arg Val Ala Ala Val Glu Val Leu
275 280 285

Leu Asn Ser Pro Leu Ile Ser Glu Leu Ile His Asn Gly Asn Ile His

290

295

300

Glu Ile Lys Glu Val Met Lys Lys Ser Thr Thr Leu Gly Met Gln Thr
305 310 315 320

Phe Asp Gln His Leu Tyr Gln Leu Tyr Glu Lys Gly Asp Ile Ser Leu
325 330 335

Gln Glu Ala Leu Lys Asn Ala Asp Ser Ala His Asp Leu Arg Leu Ala
340 345 350

Val Gln Leu Arg Ser Arg Arg Ala Gln Ser Xaa Ser Pro Asp Leu Xaa
355 360 365

Leu Leu
370

<210> 1113

<211> 1113

<212> DNA

<213> Neisseria meningitidis

<400> 1113

atgaccgcaa aggaagaact gttcgcatgg ctgcgccata tgaacaaaaa caaaggttcc 60
gacctgttcg tgacgaccca ttccccgccc gcaatgaagc tggacggcaa aatcacccgc 120
atcacggacg aaccgctgac ggcggaaaaa tgtatggaaa tcgcctttc gattatgagt 180
gcgaaggcagg cggagaatt ttcatcgacc aacgagtgc aacttcgccc cagtcgtccg 240
gacaccagcc gcttccgcgt caatgcgtat atacagcgcg gtgcgacggc gttggattc 300
cgtgcgatta ccagaagat tcccaagtt gaaaggctga acctgcgc ggtcttgaag 360
gatgtcgccg tggaaaaacg cgggctggg attttgtcg gcggcaccgg ctcggcaca 420
tcgacttcgc ttgcctcgct tatcgactac cgcaatgaaa attcggttcgg acacatcatc 480
accatcgaag acccgatcga gtttgcacca gAACACAAAAA actgcacatc cacccagcgc 540
gaggtcggcg tggatacggaa aactggatg gcggcgttga AAAACACGCT gcgtcaggca 600
ccggatgtga ttctgatcgg cggaaatccgc gaccgcgaaa caatggacta cggcattgtc 660
tttgccggaa cgggcattt gtgtatggcg acgctgcacg ccaacagcac caatcaggca 720
ctcgaccgca tcatacaactt ttccccgag gagcggcgcg aacaattgtc gacggattt 780
tcgctcaacc ttccaggcatt tatttcgcaa cgcctcggtc cgcgagacgg cggcaaggc 840
agggtggcg cagtcgaggt gctgctaat tcgccccgttga tttcgagtt gattcacaac 900
ggcaatatcc atgaaatcaa agaagtgtatg AAAAATCCA ctaccctggg tatgcagact 960
ttcgaccaac acctttacca attgtatgaa aaaggcgaga ttcccttgca ggtatgcctt 1020
aaaaatgcgg attccgcaca cggatgtcg tggcgtac agttgcgcag cggccaggcg 1080
caaagttccg gtcggattt ggaactgctc tga 1113

<210> 1114

<211> 370

<212> PRT

<213> Neisseria meningitidis

<400> 1114

Met Thr Ala Lys Glu Glu Leu Phe Ala Trp Leu Arg His Met Asn Lys
1 5 10 15

Asn Lys Gly Ser Asp Leu Phe Val Thr Thr His Phe Pro Pro Ala Met
20 25 30

Lys Leu Asp Gly Lys Ile Thr Arg Ile Thr Asp Glu Pro Leu Thr Ala
35 40 45

Glu Lys Cys Met Glu Ile Ala Phe Ser Ile Met Ser Ala Lys Gln Ala
50 55 60

Glu Glu Phe Ser Ser Thr Asn Glu Cys Asn Phe Ala Ile Ser Leu Pro
65 70 75 80

Asp Thr Ser Arg Phe Arg Val Asn Ala Met Ile Gln Arg Gly Ala Thr
85 90 95

Ala Leu Val Phe Arg Ala Ile Thr Ser Lys Ile Pro Lys Phe Glu Ser
100 105 110

Leu Asn Leu Pro Pro Val Leu Lys Asp Val Ala Leu Lys Lys Arg Gly
115 120 125

Leu Val Ile Phe Val Gly Gly Thr Gly Ser Gly Lys Ser Thr Ser Leu
130 135 140

Ala Ser Leu Ile Asp Tyr Arg Asn Glu Asn Ser Phe Gly His Ile Ile
145 150 155 160

Thr Ile Glu Asp Pro Ile Glu Phe Val His Glu His Lys Asn Cys Ile
165 170 175

Ile Thr Gln Arg Glu Val Gly Val Asp Thr Glu Asn Trp Met Ala Ala
180 185 190

Leu Lys Asn Thr Leu Arg Gln Ala Pro Asp Val Ile Leu Ile Gly Glu
195 200 205

Ile Arg Asp Arg Glu Thr Met Asp Tyr Ala Ile Ala Phe Ala Glu Thr
210 215 220

Gly His Leu Cys Met Ala Thr Leu His Ala Asn Ser Thr Asn Gln Ala
225 230 235 240

Leu Asp Arg Ile Ile Asn Phe Phe Pro Glu Glu Arg Arg Glu Gln Leu
245 250 255

Leu Thr Asp Leu Ser Leu Asn Leu Gln Ala Phe Ile Ser Gln Arg Leu
260 265 270

Val Pro Arg Asp Gly Gly Lys Gly Arg Val Ala Ala Val Glu Val Leu
275 280 285

Leu Asn Ser Pro Leu Ile Ser Glu Leu Ile His Asn Gly Asn Ile His
290 295 300

Glu Ile Lys Glu Val Met Lys Lys Ser Thr Thr Leu Gly Met Gln Thr
305 310 315 320

Phe Asp Gln His Leu Tyr Gln Leu Tyr Glu Lys Gly Glu Ile Ser Leu
325 330 335

Gln Asp Ala Leu Lys Asn Ala Asp Ser Ala His Asp Leu Arg Leu Ala
340 345 350

Val Gln Leu Arg Ser Arg Gln Ala Gln Ser Ser Gly Pro Asp Leu Glu
355 360 365

Leu Leu
370

<210> 1115
<211> 516
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1115
atgagtcttc aggccgtatt tatatacccc ccaagccgt a cgcacaata caacgaaaat 60
caggaaaacg gcgtaaacg tcataaacag ggacaaaagcg gcaaacacac cgaccggcgt 120
caggatatacg gcgtattcga ggccggaact ccattcaccg ttttcctgcc gtttcttgc 180
gcttttggaa taaaggatga tgccggcaag cagcgcggca gcccggcccg acattggcat 240
tgtgttcatt gttgttcattt aacgggtaaa aacccggcccg gccgtgcaac cgttttaagg 300
cgggaaattt cgggaaatttgt ttgcgggcgc gtgcggctga aatcaaggcg gtttgagaag 360
tgtttccnac ggcggccccc tatgtgcccga aatattattt gtgcgtcacc tgcaaaatcg 420
ccaagaacgc gcttgcgga atttccacgt tgcccacttg tttcatacgg cgtttgcctg 480
ctttttgttt ttcaaggcgt tttttcttac gcgtaa 516

<210> 1116
<211> 171
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1116
Met Ser Leu Gln Ala Val Phe Ile Tyr Pro Pro Ser Arg Thr Ala Gln
1 5 10 15

Tyr Asn Glu Asn Gln Glu Asn Gly Gly Lys Ala His Lys Gln Gly Gln
20 25 30

Ser Gly Lys His Thr Asp Arg Arg Gln Asp Ile Gly Val Phe Glu Ala
35 40 45

Gly Thr Pro Phe Thr Val Phe Leu Pro Phe Leu Val Ala Phe Glu Ile
50 55 60

Lys Asp Asp Ala Gly Lys Gln Arg Gly Ser Arg Ala Arg His Trp His
65 70 75 80

Cys Val His Cys Cys Ser Leu Thr Val Lys Asn Pro Pro Gly Arg Ala
85 90 95

Thr Val Leu Arg Arg Glu Ile Ala Lys Phe Val Cys Gly Arg Val Pro
100 105 110

Leu Lys Ser Arg Arg Phe Glu Lys Cys Phe Xaa Arg Ala Arg Pro Met
115 120 125

Cys Arg Asn Ile Ile Cys Arg Ser Pro Ala Lys Ser Pro Arg Thr Arg
130 135 140

Phe Ala Glu Phe Pro Arg Cys Pro Leu Val Ser Tyr Gly Val Cys Leu
145 150 155 160

Leu Phe Val Phe Gln Ala Val Phe Ser Tyr Ala
165 170

<210> 1117
<211> 513
<212> DNA
<213> Neisseria meningitidis

<400> 1117
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caggaaaaacg gcggtaaacg tcayaaaacag ggacaaaagcg gcaaaccacgc cgaccgctgt 120
caggatatacg gcgttattcaa ggccggaaact ccattccccg ttttcctgcc gtttcttgc 180
gcttttgaaa taaaggatga tgccggcaag cagcgcggca gccgcgcccc acatttagcat 240
tgtgttcatt ttgtttccctt aatgtttaaa aacccgcctg tccgtgcaac cgtttaagg 300
cggcaaatttgc caaaattttgt ttgcgggcgc gtgcggctga aatcaggggcg gtttgagggg 360
tgttcccgac ggcgcgcctt gtgtgccgga gtttattgtc gtcacactgc aaaatcgcca 420
agaacgcgct ttgcggaaattt tccacattgc ccactgttt catacggcgt ttacctgcct 480
tttgtktwttc aagcagtttt ttcttacgcg taa 513

<210> 1118
<211> 169
<212> PRT
<213> Neisseria meningitidis

<400> 1118
Met Ser Leu Gln Ala Val Phe Ile Tyr Pro Pro Ser Arg Thr Ala Gln
1 5 10 15

Tyr Asn Glu Asn Gln Glu Asn Gly Gly Lys Ala His Lys Gln Gly Gln
20 25 30

Ser Gly Lys His Ala Asp Arg Cys Gln Asp Ile Gly Val Phe Lys Ala
35 40 45

Gly Thr Pro Phe Pro Val Phe Leu Pro Leu Leu Val Ala Phe Glu Ile
50 55 60

Lys Asp Asp Ala Gly Lys Gln Arg Gly Ser Arg Ala Arg His His Cys
65 70 75 80

Val His Cys Cys Ser Leu Met Leu Lys Asn Pro Pro Val Arg Ala Thr
85 90 95

Val Leu Arg Arg Gln Ile Ala Lys Phe Val Cys Gly Arg Val Pro Leu
100 105 110

Lys Ser Gly Arg Phe Glu Gly Cys Ser Arg Arg Ala Ala Leu Cys Ala
115 120 125

Gly Val Ile Cys Arg Ser Pro Ala Lys Ser Pro Arg Thr Arg Phe Ala
130 135 140

Glu Phe Pro His Cys Pro Leu Val Ser Tyr Gly Val Tyr Leu Pro Phe
145 150 155 160

Val Xaa Gln Ala Val Phe Ser Tyr Ala
165

<210> 1119

<211> 513

<212> DNA

<213> Neisseria meningitidis

<400> 1119

atgagtcttc aggcggattt tgtataccccc ccaagccgtt ccgcacaata caacgaaaat 60
caggaaaacgc gcggttaaacgc tcataaacag ggacaaaagcg gcaaacacgc cgaccggccgt 120
caggatatacg gcgtattcca gaccggactt ccattcaccg ttttcctgcc gctttttgtc 180
gcttttggaaa taaaggatgatg tgccggcaag cagcgcggca gccgcgccccg acatttagcat 240
aatgttcattt gttgttcattt aacggtaaaa aacccgcggccgt tccgtcaac cgtttttaag 300
aggcggtaaaa tcacaaagttt tggtggcgga cgtgctctt tacaatcagg gcggtttaag 360
gggcatgtatg cactgccccg tggccggat attatttgc gtcacctgc aaaattgcca 420
agaacgcgct ttgcgggattt tccacattgc ccacttgttt catacggcgt ttgcctgcctt 480
tttgcgtttt aagcagttt ttcttacgcgt taa 513

<210> 1120

<211> 168

<212> PRT

<213> Neisseria meningitidis

<400> 1120

Met Ser Leu Gln Ala Val Phe Val Tyr Pro Pro Ser Arg Thr Ala Gln
1 5 10 15

Tyr Asn Glu Asn Gln Glu Asn Gly Gly Lys Ala His Lys Gln Gly Gln
20 25 30

Ser Gly Lys His Ala Asp Arg Arg Gln Asp Ile Gly Val Phe Gln Thr
35 40 45

Gly Thr Pro Phe Thr Val Phe Leu Pro Leu Phe Val Ala Phe Glu Ile
50 55 60

Lys Asp Asp Ala Gly Lys Gln Arg Gly Ser Arg Ala Arg His His Asn
65 70 75 80

Val His Cys Cys Ser Leu Thr Val Lys Asn Pro Pro Val Arg Ala Thr
85 90 95

Val Phe Lys Arg Arg Ile Thr Lys Phe Val Gly Gly Arg Ala Leu Leu
100 105 110

Gln Ser Gly Arg Phe Lys Gly His Asp Ala Leu Pro Arg Val Pro Asp
115 120 125

Ile Ile Cys Arg Ser Pro Ala Lys Leu Pro Arg Thr Arg Phe Ala Gly
130 135 140

Phe Pro His Cys Pro Leu Val Ser Tyr Gly Val Cys Leu Leu Phe Val
145 150 155 160

Phe Gln Ala Val Phe Ser Tyr Ala
165

<210> 1121

<211> 492

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1121

atggcggggc cgattttgt cgtcatcgcc agcgtcgcta tgttttgt cgccgcagcag 60
cacgcgacag atttggttac ggacgattat tataaggatg gcaagcatat cgacatccag 120
cttcatcggt atgaagaagc cgtcagacgg cataatcggttgcaggtcct catttctccc 180
gatatgaatg cggcaaaagt gtttgcggc ggcgagtttgc acggcaaaca gccttgaac 240
ctgctgctga tgcacccgac ccgcaaggcg gacgatcaaa ccgtcgccct caagcccgtc 300
ggcagcgcgc agaacggcag ggcggaatat gaggcggtgt tcaaaaacctt tccggccggcc 360
aaccactggt atgtgcgcgt ggaggacgcg gcaggcgtgt ggcgcgtcga gaacaaatgg 420
attaccagcc agggcaatgc ggtcgatttg accccgatgg acaaacttt caataatgca 480
ggaagcaaat aa 492

<210> 1122

<211> 163

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1122

Met Ala Gly Pro Ile Phe Val Val Ile Ala Ser Val Ala Met Phe Phe
1 5 10 15

Val Ala Gln Gln His Ala Thr Asp Leu Val Thr Asp Asp Tyr Tyr Lys
20 25 30

Asp Gly Lys His Ile Asp Ile Gln Leu His Arg Asp Glu Glu Ala Val
35 40 45

Arg Arg His Ile Gly Val Gln Val Leu Ile Ser Pro Asp Met Asn Ala
50 55 60

Ala Lys Val Phe Val Gly Gly Glu Phe Asp Gly Lys Gln Pro Leu Asn
65 70 75 80

Leu Leu Leu Met His Pro Thr Arg Lys Ala Asp Asp Gln Thr Val Ala
85 90 95

Leu Lys Pro Val Gly Ser Ala Gln Asn Gly Arg Ala Glu Tyr Glu Ala
100 105 110

Val Phe Lys Thr Leu Pro Pro Ala Asn His Trp Tyr Val Arg Val Glu
115 120 125

Asp Ala Ala Gly Val Trp Arg Val Glu Asn Lys Trp Ile Thr Ser Gln
130 135 140

Gly Asn Ala Val Asp Leu Thr Pro Met Asp Lys Leu Phe Asn Asn Ala
145 150 155 160

Gly Ser Lys

<210> 1123
<211> 492
<212> DNA
<213> Neisseria meningitidis

<400> 1123
atggcgggc cgattttgt cgtcatcgcc agcgctgcta tgtttttgt cgccgcagcag 60
cacgcgacag atttggttac ggacgattat tataaagacg gcaaacatat cgacatccag 120
cttcatcggt atgaagaagg cgtcagacgg catatcggttgcaggttct catttcccc 180
gatatgaatg cggcaaaagt gtttgcggc ggcgagtttgcggcaaaaca gccttgaac 240
ctgctgctga tgcacccgac ccgcaaggcg gacgatcaaa ccgtcgccct caagcccgtc 300
ggcagcgcgc agaacggcag ggcggaatat gaggcgggtgt tcaaaaaccct ttcggccgacc 360
aaccacttgtt atgtgcgcgt ggaggacgcg gcaggcgtgt ggcgcgtcga gaacaaatgg 420
attaccagcc aaggcaatgc ggtcgatttg accccgatgg acaagcttt caataatact 480
gaaagcaaat aa 492

<210> 1124
<211> 163
<212> PRT
<213> Neisseria meningitidis

<400> 1124
Met Ala Gly Pro Ile Phe Val Val Ile Ala Ser Val Ala Met Phe Phe
1 5 10 15

Val Ala Gln Gln His Ala Thr Asp Leu Val Thr Asp Asp Tyr Tyr Lys
20 25 30

Asp Gly Lys His Ile Asp Ile Gln Leu His Arg Asp Glu Glu Ala Val
35 40 45

Arg Arg His Ile Gly Val Gln Val Leu Ile Ser Pro Asp Met Asn Ala
50 55 60

Ala Lys Val Phe Val Gly Gly Glu Phe Asp Gly Lys Gln Pro Leu Asn
65 70 75 80

Leu Leu Leu Met His Pro Thr Arg Lys Ala Asp Asp Gln Thr Val Ala
85 90 95

Leu Lys Pro Val Gly Ser Ala Gln Asn Gly Arg Ala Glu Tyr Glu Ala
100 105 110

Val Phe Lys Thr Leu Ser Pro Thr Asn His Trp Tyr Val Arg Val Glu
115 120 125

Asp Ala Ala Gly Val Trp Arg Val Glu Asn Lys Trp Ile Thr Ser Gln
130 135 140

Gly Asn Ala Val Asp Leu Thr Pro Met Asp Lys Leu Phe Asn Asn Thr
145 150 155 160

Glu Ser Lys

<210> 1125
<211> 492
<212> DNA
<213> Neisseria meningitidis

<400> 1125
atggcggggc cgattttgt cgtcatcgcc agcgtcgcta tgtttttgt cgccgacag 60
cacgcgacag atttggttac ggacgattat tataaaagacg gcaaggcatat cgacatccag 120
cttcatcggt atgaagaagc cgtcagacgg catatcggttgcaggttct catttcccc 180
gatatgaatg cggcaaaagt gtttgcggc ggcgagtttg acggcaaaaca gccttgaac 240
ctgctgctga tgcacccgac cccgcaaggcg gacgatcaaa ccgtcgccct caagccccgtc 300
ggcagcgcgc agaacggcag ggcggaatat gaggcgggtgt tcaaaaaccct ttcggccgacc 360
aaccactggt atgtgcgcgt ggaggacgcg gcaggcgtgt ggcgcgtcga gaacaaatgg 420
attaccagcc aaggcaatgc ggtcgatttg accccgatgg acaaacttt caataatact 480
gaaagcaaat aa 492

<210> 1126
<211> 163
<212> PRT
<213> Neisseria meningitidis

<400> 1126
Met Ala Gly Pro Ile Phe Val Val Ile Ala Ser Val Ala Met Phe Phe
1 5 10 15

Val Ala Gln Gln His Ala Thr Asp Leu Val Thr Asp Asp Tyr Tyr Lys
20 25 30

Asp Gly Lys His Ile Asp Ile Gln Leu His Arg Asp Glu Glu Ala Val
35 40 45

Arg Arg His Ile Gly Val Gln Val Leu Ile Ser Pro Asp Met Asn Ala
50 55 60

Ala Lys Val Phe Val Gly Gly Glu Phe Asp Gly Lys Gln Pro Leu Asn
65 70 75 80

Leu Leu Leu Met His Pro Thr Arg Lys Ala Asp Asp Gln Thr Val Ala
85 90 95

Leu Lys Pro Val Gly Ser Ala Gln Asn Gly Arg Ala Glu Tyr Glu Ala
100 105 110

Val Phe Lys Thr Leu Ser Pro Thr Asn His Trp Tyr Val Arg Val Glu
115 120 125

Asp Ala Ala Gly Val Trp Arg Val Glu Asn Lys Trp Ile Thr Ser Gln
130 135 140

Gly Asn Ala Val Asp Leu Thr Pro Met Asp Lys Leu Phe Asn Asn Thr
145 150 155 160

Glu Ser Lys

<210> 1127

<211> 837

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1127

atgattttgc cgccatccat gacgatgatg cggtcggcgg attcgacggt ggtcaggcgg 60
tgggcgacga ttagtcccggt gcgggtttcc atcagggctt cgagcgctt tggtacgagg 120
cggttcggatt cggttgccaa tgcgtctggtg gcttcgtcca ataataatat cggccgtct 180
ttcaaaaatgg cgcggggcat ggcgacgcgt tgccgtctc cggccggataa gttgtgccg 240
ttcgatccga tgggctgttg cagtccgagc ggggatgcgt cgatcaggct ttgcagggtt 300
gcggcttggaa gggcggacag gacttcggct tcgcccgcgt cgggacggct gtatcggacg 360
ttttcaaaaca gggtgtcgtc aaacaggaat acgtttggg agacgagggc gaattggcgc 420
cgaggcagt cgagtttgat gtcggcgatg tcgataaccgt ctatgcagat gttgccggca 480
gacgggttcga caaagcgggg cagaagggtt acgacggtgtt atttgccgtt gccgaaacgt 540
ccgaccaggcg cgacgcgttc gccttgtctg atgtcgagggt tgaagttgtc gagggcttt 600
atgcccgtctg aacggtattc gacatcgacg ttgcgaaagc tgatgcgc 660
tgcggcgcga gcgtgcctt gtccgtttcg ggcgggtgtt cgagaaatgc acatacggcc 720
tcggcggcga ggaacatcgt ctgcatacggtt atgctgatgt tggcaaggct tttgatgggg 780
gcgtacattt gcagcatcgc gacgatgaat gccataaatt cggcgatgtt ggtgttag 837

<210> 1128

<211> 278

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1128

Met Ile Leu Pro Pro Ser Met Thr Met Met Arg Ser Ala Asp Ser Thr
1 5 10 15

Val Val Arg Arg Trp Ala Thr Met Met Pro Val Arg Phe Ser Ile Arg
20 25 30

Arg Ser Ser Ala Cys Trp Thr Arg Arg Ser Asp Ser Leu Ser Asn Ala
35 40 45

Leu Val Ala Ser Ser Asn Asn Ile Gly Ala Ser Phe Lys Met Ala
50 55 60

Arg Ala Met Ala Thr Arg Cys Arg Cys Pro Pro Asp Lys Leu Leu Pro
65 70 75 80

Phe Asp Pro Met Gly Trp Cys Ser Pro Ser Gly Asp Ala Ser Ile Arg
85 90 95

Leu Cys Arg Leu Ala Ala Trp Arg Ala Asp Arg Thr Ser Ala Ser Pro
 100 105 110
 Ala Ser Gly Arg Leu Tyr Arg Thr Phe Ser Asn Arg Val Ser Ser Asn
 115 120 125
 Arg Asn Thr Ser Trp Glu Thr Arg Ala Asn Trp Ala Arg Arg Gln Ser
 130 135 140
 Ser Leu Met Ser Ala Met Ser Ile Pro Ser Met Gln Met Leu Pro Ala
 145 150 155 160
 Asp Gly Ser Thr Lys Arg Gly Arg Arg Leu Thr Thr Val Asp Leu Pro
 165 170 175
 Leu Pro Glu Arg Pro Thr Arg Ala Thr Arg Ser Pro Cys Leu Met Ser
 180 185 190
 Arg Leu Lys Leu Ser Arg Ala Leu Met Pro Ser Glu Arg Tyr Ser Thr
 195 200 205
 Ser Thr Leu Arg Lys Leu Met Arg Pro Ser Thr Arg Cys Gly Ala Ser
 210 215 220
 Val Pro Leu Ser Cys Ser Gly Gly Val Ser Arg Asn Ala His Thr Pro
 225 230 235 240
 Ser Ala Ala Arg Asn Ile Val Cys Ile Gly Met Leu Met Leu Ala Arg
 245 250 255
 Leu Leu Met Gly Ala Tyr Ile Cys Ser Ile Ala Thr Met Asn Ala Ile
 260 265 270
 Asn Ser Pro Met Val Val
 275

<210> 1129
 <211> 837
 <212> DNA
 <213> Neisseria meningitidis

<400> 1129
 atgattttgc cgtcgccat cacgatgatg cggtcggccc cttcgatgg ggtcaggcgg 60
 tggcgacga ttagtgcgggt gcggtttcc atcaggcggt cgagcgcctg ttggacgagg 120
 cgttcggatt cggtgtctaa tgccgtggtg gcttcgtcca ataataatcg cggcgcgtct 180
 ttcaaaatgg cgccggcaat ggcgacgcgt tgccgtgtc cgccggataa gttgtgccc 240
 ttgcgtccga tgggctggtg cagtccgagc ggggagctgt caatcaggct ttgcaggttg 300
 gcgggttggaa gggcgaacag gacttcggct tcgccccgt cgggacggct gtatcggacg 360
 ttttcaaaca gggtgtcgtc aaacaggaat acgtcttggg agacgaggcga gaattggcgg 420
 cgccaggcgt cgagttgtat gtcggcgatg tcgataaccgt ctatgcagat gttgccggca 480
 gacgggtcga caaagcgggg cagcagggtt acgacgggtt atttgccgt gccgaaacgt 540
 ccgaccaggcg cgacgcgttc gccttgtctg atgtcgagggt tgaagttgtc gagggctttg 600
 atgccgtctg aacggtatttc gacatcgacg ttgcgaaagc tgatgcgcctt ttcgacacgc 660
 tgcgggtcga gcgtgcctt gtccgtttcg ggccgggtgt cgagaaaatgc acatacaccc 720
 tcggcggcga ggaacatcgatgt ctgcatacggt atgctgatgt tggcaaggct tttgatgggg 780
 gcgtacattt gcagcatcgac gacgatgaat gccataattt cgccgatgg ggtgttag 837

<210> 1130
<211> 278
<212> PRT
<213> Neisseria meningitidis

<400> 1130
Met Ile Leu Pro Ser Ser Ile Thr Met Met Arg Ser Ala Pro Ser Met
1 5 10 15

Val Val Arg Arg Trp Ala Thr Met Met Pro Val Arg Phe Ser Ile Arg
20 25 30

Arg Ser Ser Ala Cys Trp Thr Arg Arg Ser Asp Ser Leu Ser Asn Ala
35 40 45

Leu Val Ala Ser Ser Asn Asn Ile Gly Ala Ser Phe Lys Met Ala
50 55 60

Arg Ala Met Ala Thr Arg Cys Arg Cys Pro Pro Asp Lys Leu Leu Pro
65 70 75 80

Phe Asp Pro Met Gly Trp Cys Ser Pro Ser Gly Glu Leu Ser Ile Arg
85 90 95

Leu Cys Arg Leu Ala Val Trp Arg Ala Asn Arg Thr Ser Ala Ser Pro
100 105 110

Ala Ser Gly Arg Leu Tyr Arg Thr Phe Ser Asn Arg Val Ser Ser Asn
115 120 125

Arg Asn Thr Ser Trp Glu Thr Arg Ala Asn Trp Ala Arg Arg Gln Ser
130 135 140

Ser Leu Met Ser Ala Met Ser Ile Pro Ser Met Gln Met Leu Pro Ala
145 150 155 160

Asp Gly Ser Thr Lys Arg Gly Ser Arg Leu Thr Thr Val Asp Leu Pro
165 170 175

Leu Pro Glu Arg Pro Thr Arg Ala Thr Arg Ser Pro Cys Leu Met Ser
180 185 190

Arg Leu Lys Leu Ser Arg Ala Leu Met Pro Ser Glu Arg Tyr Ser Thr
195 200 205

Ser Thr Leu Arg Lys Leu Met Arg Pro Ser Thr Arg Cys Gly Ala Ser
210 215 220

Val Pro Leu Ser Cys Ser Gly Gly Val Ser Arg Asn Ala His Thr Pro
225 230 235 240

Ser Ala Ala Arg Asn Ile Val Cys Ile Gly Met Leu Met Leu Ala Arg
245 250 255

Leu Leu Met Gly Ala Tyr Ile Cys Ser Ile Ala Thr Met Asn Ala Ile

260

265

270

Asn Ser Pro Met Val Val
275

<210> 1131
<211> 837
<212> DNA
<213> Neisseria meningitidis

<400> 1131
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tggcgacga ttagtgcgggt gccggtttcc atcaggcggtt cgagcgcctt ttggacgagg 120
cggtcggtt cgttgccaa tgcgctgggt gcttcgtcca ataataatcg cggcgcgtct 180
ttcaaaaatgg cgccggcaat ggcaacgcgt tgccgctgtc cgccggataa gttgctgccc 240
ttcgatccga tgggctgggt cagtcggagc ggtgatgcgtt cgatcaggct ttgcaggtta 300
gcggcttggg gggcgatag gacttcgggt tcgcccgcgtt cgggacggctt atatcgacg 360
ttttcaaaaca ggggtgcgtc aaacaggaat acgtcttggg agacgaggggc aaattgggcg 420
cgccaggcagt cgagttgtat gtcggcgatgt tcgataccgtt ctatgcagat gttgccggca 480
gacggttcga caaagcgggg cagcagggtt acgacgggtt atttgccgtt gccgaaacgt 540
ccgaccaggcg cggcggttc gccttgtctt atgtcgaggt tgaagccgtc gagggtttt 600
atgccgtccg aacggtattc gacatcgacg ttgcggaaagc ttagtgcgcctt ttcgacacgc 660
tgcgggtcgaa gcgtgcctt gtccctgttcg ggcgggggtgtt cgagaaatgc acatacgccg 720
tcggcggcgaa ggaacatcgatgtt ctgcatacggtt atgctaattgtt tggcaaggctt tttgtatgggg 780
gcgtacattt gcagcatcgac gacgatgaat gccataaattt cgccgatgtt ggtgttag 837

<210> 1132
<211> 278
<212> PRT
<213> Neisseria meningitidis

<400> 1132
Met Ile Leu Pro Ser Ser Ile Thr Met Met Arg Ser Ala Pro Ser Met
1 5 10 15

Val Val Arg Arg Trp Ala Thr Met Met Pro Val Arg Phe Ser Ile Arg
20 25 30

Arg Ser Ser Ala Cys Trp Thr Arg Arg Ser Asp Ser Leu Ser Asn Ala
35 40 45

Leu Val Ala Ser Ser Asn Asn Ile Gly Ala Ser Phe Lys Met Ala
50 55 60

Arg Ala Met Ala Thr Arg Cys Arg Cys Pro Pro Asp Lys Leu Leu Pro
65 70 75 80

Phe Asp Pro Met Gly Trp Cys Ser Pro Ser Gly Asp Ala Ser Ile Arg
85 90 95

Leu Cys Arg Leu Ala Ala Trp Arg Ala Asp Arg Thr Ser Ala Ser Pro
100 105 110

Ala Ser Gly Arg Leu Tyr Arg Thr Phe Ser Asn Arg Val Ser Ser Asn
115 120 125

Arg Asn Thr Ser Trp Glu Thr Arg Ala Asn Trp Ala Arg Arg Gln Ser
 130 135 140
 Ser Leu Met Ser Ala Met Ser Ile Pro Ser Met Gln Met Leu Pro Ala
 145 150 155 160
 Asp Gly Ser Thr Lys Arg Gly Ser Arg Leu Thr Thr Val Asp Leu Pro
 165 170 175
 Leu Pro Glu Arg Pro Thr Arg Ala Thr Arg Ser Pro Cys Leu Met Ser
 180 185 190
 Arg Leu Lys Pro Ser Arg Ala Leu Met Pro Ser Glu Arg Tyr Ser Thr
 195 200 205
 Ser Thr Leu Arg Lys Leu Met Arg Pro Ser Thr Arg Cys Gly Ala Ser
 210 215 220
 Val Pro Leu Ser Cys Ser Gly Gly Val Ser Arg Asn Ala His Thr Pro
 225 230 235 240
 Ser Ala Ala Arg Asn Ile Val Cys Ile Gly Met Leu Met Leu Ala Arg
 245 250 255
 Leu Leu Met Gly Ala Tyr Ile Cys Ser Ile Ala Thr Met Asn Ala Ile
 260 265 270
 Asn Ser Pro Met Val Val
 275

<210> 1133
<211> 669
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 1133
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atagacgtt tccacgcctt gcaggtacat cgccaagcg t tcgatgccgt aggttaatttc 120
gccgagtacg ggcgtcaat cgataccgccc gacttgggaa a a a t a g g t a a a c t g g g t t a c 180
ttccatgccc ttgagccaga cttcccgagcc caaacc c c a c g a c c g a g g g t g g g t t t c 240
ccagtcgtct tcgacaaaagc ggatgtcg t g a c t t g g g a t c g a t g c c c a a t t c g c g c a g 300
ggagtcgaga tagaggtctt ggatattggc gggggcggg t t g a g g g c g a c t t g g a a t t g 360
gtaatagtgt tgcaggcggt tggggtgtc g c c g t a g c g g c c g t c t t t g g g c g g g c t 420
gggttggacg taggcggcaa accaaggctc ggggccc g a g c g c g c a g g c a g g t g g c g g g 480
atgggatgtg ccggcaccga ct t c c a t g t c g a a g g g t t g g a t g a c g g t g c a g c t t t g t c 540
tgcccagaag gtttgcagtt t g a a g a t g a t t g t g a a g c a t g g a t t a t t g t c 600
gataaaataa aggtttatt t t a c t g t t c c a t a g c c g c t g a a t a g a t t a t c t c g a a g 660
a c a g c c t g a 669

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<210> 1134
<211> 222
<212> PRT
<213> Neisseria gonorrhoeae
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<400> 1134
 Met Val His Val Ala Val Ala Tyr Gly Ile Ala Val Arg Arg Phe Cys
 1 5 10 15
 Pro Asn Glu Val Ile Asp Val Phe His Ala Leu Gln Val His Arg Gln
 20 25 30
 Ala Phe Asp Ala Val Gly Asn Phe Ala Glu Tyr Gly Arg Ala Ile Asp
 35 40 45
 Thr Ala Asp Leu Leu Glu Ile Gly Lys Leu Gly Tyr Phe His Ala Val
 50 55 60
 Glu Pro Asp Phe Pro Ala Gln Thr Pro Arg Thr Glu Gly Gly Val Phe
 65 70 75 80
 Pro Val Val Phe Asp Lys Ala Asp Val Val Asp Phe Gly Ile Asp Ala
 85 90 95
 Gln Phe Ala Gln Gly Val Glu Ile Glu Val Leu Asp Ile Gly Gly Gly
 100 105 110
 Gly Phe Glu Gly Asp Leu Glu Leu Val Ile Val Leu Gln Ala Val Gly
 115 120 125
 Val Val Ala Val Ala Ala Val Phe Gly Ala Ala Ala Gly Leu Asp Val
 130 135 140
 Gly Gly Lys Pro Arg Leu Gly Ala Glu Arg Ala Gln Ala Gly Gly Gly
 145 150 155 160
 Met Gly Cys Ala Gly Thr Asp Phe His Val Glu Gly Leu Asp Asp Gly
 165 170 175
 Ala Ala Phe Val Cys Pro Glu Gly Leu Gln Phe Glu Asp Asp Leu Leu
 180 185 190
 Glu Gly Lys His Gly Leu Leu Phe Asp Lys Ile Lys Val Leu Phe Tyr
 195 200 205
 Cys Phe His Ser Arg Leu Asn Arg Phe Ile Ser Lys Thr Ala
 210 215 220

<210> 1135
<211> 759
<212> DNA
<213> *Neisseria meningitidis*

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<400> 1135
atgccccgct ttgaggacaa gctcgttaggc aggccaggcg aggccggcgt tttcttcggc 60
aaggcaggcgt ttggcttgcg cttcgttagtc gttgaactgg cgccagcagcc agtcggcatc 120
gctgtattcg aagtgttagg tggattgctc gacttcgttt tggtggta ca cgtcgccgta 180
ggtagccgtg ttgccgtcga gcgttttgc ccaaaccgagg tcgttagacgt tttctacacc 240
ttgcaagtac atccccaagc gttcgatgcc gttaggtgatt tcgcccagta cggccgtgca 300
gtcgatgccc ccgacttggtt ggaaataggt aaactgggtt acttccatqc cggtqaqcca 360
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gacttcccag cccaaacccc acgcgccgag ggtggggttt tcccagtctg ctgcacaaa 420
gcggatgtcg tggacttgg gatcgatgcc caattcgcc agagagtca gatacaggc 480
ttggatattg gcgggagccg gcttgagggc gacttggaaat tggtaataatg gttgcaggcg 540
gttggggatgg tcgccccgtc ggccgtcttt ggggcggccg ctgggttggc cgttaggcggc 600
aaacccaaggc tcggggccga gtgcgcgcag gcagggtggcg gatgggatg tgccggcacc 660
gacttccatg tcgaagggtt ggatgacggt gcagcccttg tctgcccaga atgtttcag 720
tttgaagatg atttggta aggttaagcat ggcttatga 759

<210> 1136

<211> 252

<212> PRT

<213> Neisseria meningitidis

<400> 1136

Met Pro Arg Phe Glu Asp Lys Leu Val Gly Arg Gln Gly Glu Gly Gly
1 5 10 15

Val Phe Phe Gly Lys Gln Ala Phe Gly Leu Arg Phe Val Val Val Glu
20 25 30

Leu Ala Gln Gln Pro Val Gly Ile Ala Val Phe Glu Val Val Gly Gly
35 40 45

Leu Leu Asp Phe Val Leu Val Val His Val Ala Val Gly Asp Gly Val
50 55 60

Ala Val Glu Arg Phe Cys Pro Asn Glu Val Val Asp Val Phe Tyr Thr
65 70 75 80

Leu Gln Val His Arg Gln Ala Phe Asp Ala Val Gly Asp Phe Ala Glu
85 90 95

Tyr Gly Arg Ala Val Asp Ala Ala Asp Leu Leu Glu Ile Gly Lys Leu
100 105 110

Gly Tyr Phe His Ala Val Glu Pro Asp Phe Pro Ala Gln Thr Pro Arg
115 120 125

Ala Glu Gly Gly Val Phe Pro Val Val Phe Asp Lys Ala Asp Val Val
130 135 140

Asp Phe Gly Ile Asp Ala Gln Phe Ala Gln Arg Val Glu Ile Glu Val
145 150 155 160

Leu Asp Ile Gly Gly Ser Gly Leu Glu Gly Asp Leu Glu Leu Val Ile
165 170 175

Val Leu Gln Ala Val Gly Val Val Ala Val Ala Val Phe Gly Ala
180 185 190

Ala Ala Gly Leu Asp Val Gly Gly Lys Pro Arg Leu Gly Ala Glu Cys
195 200 205

Ala Gln Ala Gly Gly Gly Met Gly Cys Ala Gly Thr Asp Phe His Val
210 215 220

Glu Gly Leu Asp Asp Gly Ala Ala Phe Val Cys Pro Glu Cys Leu Gln
225 230 235 240

Phe Glu Asp Asp Leu Leu Glu Gly Lys His Gly Leu
245 250

<210> 1137
<211> 759
<212> DNA
<213> Neisseria meningitidis

<400> 1137
atgccccgct ttgaggacaa gctcgttaggc aggcaaggcg aggccggcgt tttcttcggc 60
aagcaggcgt ttggcttgcg cttcgttagtc gttgaactgg cgcagcagcc aatccgcattc 120
gctgtattcg aagttttagg tggattgttc gacttcgttt tgggtgtaca cgtcgccgt 180
agttaactgtt ttaccgtcca gcgttttgc ccaaaccgagg tcatacgtt tttccacgccc 240
ttgcaggtac atcgccaaagc gttcgatgcc gtaggtgatt tcgcccggata cgggggtgca 300
gtcgatgccg ccgacttgtt gaaaataggt gaactgggtt acttccatac cggttggcca 360
gacttcccag cccaaacccc acgcgcgcg ggtgggttt tcccaactgtt ctgcacaaa 420
gcggatgtcg tgcactttgg ggtcgatgcc caattcgccg aggaggtcga gatagaggc 480
ttggatatttgc gggggagcgg gcttgaggcc gacttggaaat tggtaatagt gttgcaggcg 540
gttggggtttgc tgccgttagc gaccgtcttt gggccggcgg ctgggttggc cgtaggcggc 600
aaaccaaggc tcggggccgaa gtgcgcgcg acagggtggcg gatggatg tgccggcacc 660
gacttccatg tcgaagggtt ggatgacggc gcagcccttg tctgcccaga atgtttgcag 720
tttgaagatg atttgttggc aggttaagcat ggcttatga 759

<210> 1138
<211> 252
<212> PRT
<213> Neisseria meningitidis

<400> 1138
Met Pro Arg Phe Glu Asp Lys Leu Val Gly Arg Gln Gly Glu Gly Gly
1 5 10 15

Val Phe Phe Gly Lys Gln Ala Phe Gly Leu Arg Phe Val Val Val Glu
20 25 30

Leu Ala Gln Gln Pro Ile Gly Ile Ala Val Phe Glu Val Val Gly Gly
35 40 45

Leu Phe Asp Phe Val Leu Val Val His Val Ala Val Ser Tyr Cys Ile
50 55 60

Thr Val Gln Arg Phe Cys Pro Asn Glu Val Ile Asp Val Phe His Ala
65 70 75 80

Leu Gln Val His Arg Gln Ala Phe Asp Ala Val Gly Asp Phe Ala Glu
85 90 95

Tyr Gly Gly Ala Val Asp Ala Ala Asp Leu Leu Glu Ile Gly Glu Leu
100 105 110

Gly Tyr Phe His Thr Val Glu Pro Asp Phe Pro Ala Gln Thr Pro Arg

115	120	125
Ala Glu Gly Gly Val Phe Pro Val Val Phe Asp Lys Ala Asp Val Val		
130	135	140
His Phe Gly Val Asp Ala Gln Phe Ala Gln Gly Val Glu Ile Glu Val		
145	150	155
Leu Asp Ile Gly Gly Ser Gly Leu Glu Gly Asp Leu Glu Leu Val Ile		
165	170	175
Val Leu Gln Ala Val Gly Val Val Ala Val Ala Thr Val Phe Gly Ala		
180	185	190
Ala Ala Gly Leu Asp Val Gly Gly Lys Pro Arg Leu Gly Ala Glu Cys		
195	200	205
Ala Gln Thr Gly Gly Gly Met Gly Cys Ala Gly Thr Asp Phe His Val		
210	215	220
Glu Gly Leu Asp Asp Gly Ala Ala Phe Val Cys Pro Glu Cys Leu Gln		
225	230	235
Phe Glu Asp Asp Leu Leu Glu Gly Lys His Gly Leu		
245	250	

<210> 1139

<211> 512

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1139

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ttgcgtgcaa tcacccccgg tgcgatttt tcgacagggg cggtaaaagt tgtattaatc 60
ggaccttgc cgtcgatagg ccgaccataat gcatcgacga cgcgtccgac caattcgcgt 120
ccgaccggca cttctaaaat acggccggta caggttaaccg tgtcgccttc tttaatatgt 180
tcgtactcgc ccaacactac ggcaccgacg gagtcgcgct ccaggttcat cgccaaggct 240
aaagtgttac ccggaaattc gagcatctca cttgcattt catctgacaa accatggatg 300
cgaacgatac cgtcaattt cggaaatcacc gtaccacggg tactcacttc ggcatttaca 360
gacagatttt cgtatctggc tttaatcaga tcgctaattt cagcaggatt aagctgcattg 420
aaaactctcc taattcgtca tagtcgtgtt caaagcactc agttgcctt gtacagacaa 480
atccaaaacc tgcgttccca ctcaacttt ta 512
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<210> 1140

<211> 170

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1140

Leu Arg Ala Ile Thr Pro Gly Ala Ile Phe Ser Thr Gly Ala Val Lys		
1	5	10
		15

Val Val Leu Ile Gly Pro Leu Pro Ser Ile Gly Arg Pro Asn Ala Ser		
20	25	30

Thr Thr Arg Pro Thr Asn Ser Arg Pro Thr Gly Thr Ser Lys Ile Arg

35

40

45

Pro Val Gln Val Thr Val Ser Pro Ser Leu Ile Cys Ser Tyr Ser Pro
50 55 60

Asn Thr Thr Ala Pro Thr Glu Ser Arg Ser Arg Phe Ile Ala Lys Pro
65 70 75 80

Lys Val Leu Pro Gly Asn Ser Ser Ile Ser Pro Cys Ile Ala Ser Asp
85 90 95

Lys Pro Trp Met Arg Thr Ile Pro Ser Val Thr Glu Ile Thr Val Pro
100 105 110

Arg Val Leu Thr Ser Ala Phe Thr Asp Arg Phe Ser Ile Leu Ala Leu
115 120 125

Ile Arg Ser Leu Ile Ser Ala Gly Leu Ser Cys Met Lys Thr Leu Leu
130 135 140

Ile Arg His Ser Arg Val Gln Ser Thr Gln Phe Ala Leu Tyr Arg Gln
145 150 155 160

Ile Gln Asn Leu Ile Thr His Phe Asn Phe
165 170

<210> 1141

<211> 660

<212> DNA

<213> Neisseria meningitidis

<400> 1141

ttgcgcgcaa tcacgccccgg tgcgattttt tcgatagggg cggtaaaagt tgtattaatc 60
gggccttgc cgtcgatagg ccgacccaat gcatcaacga cgcgtccgac cagttcgcg 120
ccgaccggca cttccaagat acgaccggta caggttaaccg tgtcgccttc ttatgtgt 180
tcgtactcgc ccaacactac ggcgccgacg gagtcgcgct ccaggttcat cgccaaggcg 240
aaagtgttac ccgggaattc gagcatctca cttgcattt catctgacaa accatggatg 300
cgaacgatac cgtcagttac cggaaattacc gtaccacagg tacgcacttc ggcatttaca 360
gacagatttt cgatcttgc ttatcaaaa tcgctaattt cagcaggatt aagctgcattg 420
aaaactctcc taattcgtca tagtcgtgtca aaggcactc aatttgcctt gtacagacaa 480
atccaaaaacc tgcacaccca cttcaacttt tatgccgcca atcagctccg gttcgatttc 540
gacagagatt tttagctcgc tgtcgaaacg cttatccagc atttgacacca actcgccgac 600
ctgtttgtcg gtcaacggat aggcactgtaa atgacggca gatttgatat gttgaatga 660

<210> 1142

<211> 219

<212> PRT

<213> Neisseria meningitidis

<400> 1142

Leu Arg Ala Ile Thr Pro Gly Ala Ile Phe Ser Ile Gly Ala Val Lys
1 5 10 15

Val Val Leu Ile Gly Pro Leu Pro Ser Ile Gly Arg Pro Asn Ala Ser
20 25 30

Thr	Thr	Arg	Pro	Thr	Ser	Ser	Arg	Pro	Thr	Gly	Thr	Ser	Lys	Ile	Arg
35															45
Pro	Val	Gln	Val	Thr	Val	Ser	Pro	Ser	Leu	Met	Cys	Ser	Tyr	Ser	Pro
50															60
Asn	Thr	Thr	Ala	Pro	Thr	Glu	Ser	Arg	Ser	Arg	Phe	Ile	Ala	Lys	Pro
65															80
Lys	Val	Leu	Pro	Gly	Asn	Ser	Ser	Ile	Ser	Pro	Cys	Ile	Ala	Ser	Asp
85															95
Lys	Pro	Trp	Met	Arg	Thr	Ile	Pro	Ser	Val	Thr	Glu	Ile	Thr	Val	Pro
100															110
Gln	Val	Arg	Thr	Ser	Ala	Phe	Thr	Asp	Arg	Phe	Ser	Ile	Leu	Ala	Leu
115															125
Ile	Lys	Ser	Leu	Ile	Ser	Ala	Gly	Leu	Ser	Cys	Met	Lys	Thr	Leu	Leu
130															140
Ile	Arg	His	Ser	Arg	Val	Gln	Gly	Thr	Gln	Phe	Ala	Leu	Tyr	Arg	Gln
145															160
Ile	Gln	Asn	Leu	Ile	Thr	His	Phe	Asn	Phe	Tyr	Ala	Ala	Asn	Gln	Leu
165															175
Arg	Phe	Asp	Phe	Asp	Arg	Asp	Phe	Gln	Leu	Ala	Val	Glu	Thr	Leu	Ile
180															190
Gln	His	Leu	His	Gln	Leu	Ala	Asp	Leu	Phe	Val	Gly	Gln	Arg	Ile	Gly
195															205
Thr	Val	Asn	Asp	Gly	Arg	Phe	Asp	Met	Val	Glu					
210															215

<210> 1143

<211> 660

<212> DNA

<213> Neisseria meningitidis

<400> 1143

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 ccgaccggca cttccaagat acgaccggta caggttaaccg tgcgccttc ttatatatgt 180
 tcgtgctcgc ccaacactac ggcgccgacg gagtcgcgt ccaggttcat cgccaaagccg 240
 aaagtgttac ccgggaattc gaggcatctca ccttgatttgc catctgacaaa accatggatg 300
 cgaacgatac cgtcagttac cgaatcacc gtaccacggg tacgcacttc ggcatttaca 360
 gacagatttt cgtatctggc ttatcaaaa tcgctaattt cagcaggatt aagctgcattg 420
 aaaactctcc taattcgtca tagtcgtgtca caaggcactc aatttgcctt gtacagacaa 480
 atccaaaacc tgatcaccca ctcaacttt tatgcccaca atcagctccg gttcgatttc 540
 gacagagatt ttcaagctcgc tgcgaaacgc cttattcagc atttgcgcaca actcggccgac 600
 ctgtttgtcg gtcacggat aggcactgtaa atgacggca gatttgcataatgatga 660

<210> 1144
<211> 219
<212> PRT
<213> Neisseria meningitidis

<400> 1144
Leu Arg Ala Ile Thr Pro Gly Ala Ile Phe Ser Ile Gly Ala Val Lys
1 5 10 15

Val Val Leu Ile Gly Pro Leu Pro Ser Ile Gly Arg Pro Asn Ala Ser
20 25 30

Thr Thr Arg Pro Thr Ser Ser Arg Pro Thr Gly Thr Ser Lys Ile Arg
35 40 45

Pro Val Gln Val Thr Val Ser Pro Ser Leu Ile Cys Ser Cys Ser Pro
50 55 60

Asn Thr Thr Ala Pro Thr Glu Ser Arg Ser Arg Phe Ile Ala Lys Pro
65 70 75 80

Lys Val Leu Pro Gly Asn Ser Ser Ile Ser Pro Cys Ile Ala Ser Asp
85 90 95

Lys Pro Trp Met Arg Thr Ile Pro Ser Val Thr Glu Ile Thr Val Pro
100 105 110

Arg Val Arg Thr Ser Ala Phe Thr Asp Arg Phe Ser Ile Leu Ala Leu
115 120 125

Ile Lys Ser Leu Ile Ser Ala Gly Leu Ser Cys Met Lys Thr Leu Leu
130 135 140

Ile Arg His Ser Arg Val Gln Gly Thr Gln Phe Ala Leu Tyr Arg Gln
145 150 155 160

Ile Gln Asn Leu Ile Thr His Phe Asn Phe Tyr Ala Ala Asn Gln Leu
165 170 175

Arg Phe Asp Phe Asp Arg Asp Phe Gln Leu Ala Val Glu Thr Leu Ile
180 185 190

Gln His Leu Arg Gln Leu Ala Asp Leu Phe Val Gly Gln Arg Ile Gly
195 200 205

Thr Val Asn Asp Gly Arg Phe Asp Met Val Glu
210 215

<210> 1145
<211> 459
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1145
atgacgcgga tttgcggctg cttgatttca acgggttga gtgtttcgcc aagtttgtcg 60
gcggcgggtt tcatcaggct gcaatggaa ggaacggata ccggcagcgg cagggcgcgt 120

ttggctccgg cttctttggc ggcagccatg gtgcgtccga cggcggcggc gttgcctgca 180
atcacgactt gtccggcga gttgaagttg acggcttcga ccacttcgcc ctgtgcggat 240
tcggcacaaa tctgcctgac ctgttcatct tccaaaccca aaatggccgc cattgcgcct 300
acgccttgcg gtacggcga ctgcatcagt tcggcgcga ggcggacgag tttgacggca 360
tcggcaaaaat ccaatgcttc ggcggcgaca agcgcgtgt attcgccgag gctgtgtccg 420
gcaacggcgg caggcgaaaa tccaaatag 459

<210> 1146
<211> 152
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1146
Met Thr Arg Ile Cys Gly Cys Leu Ile Ser Thr Val Leu Ser Val Ser
1 5 10 15

Ala Ser Leu Ser Ala Ala Gly Phe Ile Arg Leu Gln Trp Glu Gly Thr
20 25 30

Asp Thr Gly Ser Gly Arg Ala Arg Leu Ala Pro Ala Ser Leu Ala Ala
35 40 45

Ala Met Val Arg Pro Thr Ala Ala Ala Leu Pro Ala Ile Thr Thr Cys
50 55 60

Pro Gly Glu Leu Lys Leu Thr Ala Ser Thr Thr Ser Pro Cys Ala Asp
65 70 75 80

Ser Ala Gln Ile Cys Leu Thr Cys Ser Ser Ser Lys Pro Lys Met Ala
85 90 95

Ala Ile Ala Pro Thr Pro Cys Gly Thr Ala Asp Cys Ile Ser Ser Ala
100 105 110

Arg Arg Arg Thr Ser Leu Thr Ala Ser Ala Lys Ser Asn Ala Ser Ala
115 120 125

Ala Thr Ser Ala Val Tyr Ser Pro Arg Leu Cys Pro Ala Thr Ala Ala
130 135 140

Gly Val Leu Pro Pro Thr Ser Lys
145 150

<210> 1147
<211> 459
<212> DNA
<213> Neisseria meningitidis

<400> 1147
ataacgcgga tttgcggctg ctgtattca acggtttca gggcttcggc aagtttgtcg 60
gcggcgggtt tcatcaggct gcaatggaa ggtacggaca cgggcagcgg caggcgccgt 120
ttggcaccgg cttctttggc ggcagccatg gcgcgtccga cggcggcggc gttgcctgca 180
atcacgattt gtccgggtga gttgaagttg acggcttcga ccacttcgct ttggcggct 240
tcggcacaaa tggcttaac ctgctcatct tccaaagccga gaatgcgcgc cattgcgcgc 300

acgccttgcg gtacggcgga ctgcattcgt tcggcgca ggcgcacgag tttgaccgcg 360
tcggcaaaat tcaatgcgcc ggcggcaacg agtgcggtgt attcgccgag gctgtgtccg 420
gcaacggcgg caggcgaaaaat gccgccccgt tctaaatag 459

<210> 1148
<211> 152
<212> PRT
<213> Neisseria meningitidis

<400> 1148
Ile Thr Arg Ile Cys Gly Cys Leu Ile Ser Thr Val Phe Arg Ala Ser
1 5 10 15

Ala Ser Leu Ser Ala Ala Gly Phe Ile Arg Leu Gln Trp Glu Gly Thr
20 25 30

Asp Thr Gly Ser Gly Arg Ala Arg Leu Ala Pro Ala Ser Leu Ala Ala
35 40 45

Ala Met Ala Arg Pro Thr Ala Ala Ala Leu Pro Ala Ile Thr Ile Cys
50 55 60

Pro Gly Glu Leu Lys Leu Thr Ala Ser Thr Thr Ser Leu Trp Ala Ala
65 70 75 80

Ser Ala Gln Met Ala Leu Thr Cys Ser Ser Ser Lys Pro Arg Ile Ala
85 90 95

Ala Ile Ala Pro Thr Pro Cys Gly Thr Ala Asp Cys Ile Ser Ser Ala
100 105 110

Arg Arg Arg Thr Ser Leu Thr Ala Ser Ala Lys Phe Asn Ala Pro Ala
115 120 125

Ala Thr Ser Ala Val Tyr Ser Pro Arg Leu Cys Pro Ala Thr Ala Ala
130 135 140

Gly Val Leu Pro Pro Ala Ser Lys
145 150

<210> 1149
<211> 459
<212> DNA

<213> Neisseria meningitidis

<400> 1149
atgacncnga tttgcggctg ctgttattca acggtttnna gggcttcggc gagtttgcg 60
gcggcggtt tcatgaggct gcaatggaaa ggttaengaca cnngcagcgg cagggcgcgt 120
ttggcgccgg cttctttggc ggcaagcata ggcgcgtcga cggcgccggc attgcctgca 180
atcacgactt gtccggcga gttgaagttt acggcttcaa ccacttcattt ctgtgcggat 240
tcggcgcaaa tttgtttac ctgttcatct tccaaagccga gaatcgccgc cattgcgccc 300
acgccttgcg gtacggcgga ctgcattcgt tcggcgca ggcgcacgag tttgaccgcg 360
tcggcaaaat ccaatgcgcc ggcggcaacn agtgcggtgt attcgccgan gctgtgtccg 420
gcaacggcgg caggcgaaaaat gccgccccgt tccgaatag 459

<210> 1150
<211> 152
<212> PRT
<213> Neisseria meningitidis

<400> 1150
Met Thr Xaa Ile Cys Gly Cys Leu Ile Ser Thr Val Xaa Arg Ala Ser
1 5 10 15

Ala Ser Leu Ser Ala Ala Gly Phe Met Arg Leu Gln Trp Glu Gly Thr
20 25 30

Asp Thr Gly Ser Gly Arg Ala Arg Leu Ala Pro Ala Ser Leu Ala Ala
35 40 45

Ser Ile Ala Arg Ser Thr Ala Ala Ala Leu Pro Ala Ile Thr Thr Cys
50 55 60

Pro Gly Glu Leu Lys Leu Thr Ala Ser Thr Thr Ser Ser Cys Ala Asp
65 70 75 80

Ser Ala Gln Ile Cys Phe Thr Cys Ser Ser Ser Lys Pro Arg Ile Ala
85 90 95

Ala Ile Ala Pro Thr Pro Cys Gly Thr Ala Asp Cys Ile Ser Ser Ala
100 105 110

Arg Xaa Arg Thr Ser Leu Thr Ala Ser Ala Lys Ser Asn Ala Pro Ala
115 120 125

Ala Thr Ser Ala Val Tyr Ser Pro Xaa Leu Cys Pro Ala Thr Ala Ala
130 135 140

Gly Val Leu Pro Pro Ala Ser Glu
145 150

<210> 1151
<211> 927
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1151
atgaaaacacc tcaaacttac ccttattgcc gcattgctgg ccaccgcgc aactgccga 60
cccctccgg ttgttaaccag ttcagcatt ttaggcgacg tagccaaaca aatccggcggt 120
gagcgcgtag ccgtacaaag cctcgctgga gccaaccaag atactcatgc ctatcacatg 180
accagtggcg acattaaaaaa aatccgcagt gcaaaaactcg tcctgctcaa cggcttggga 240
cttgaagccg ccgacatcca acgcgcgcgtc aaacagagca aagtatccta tgccgaagcg 300
acccaaaggca tccaaacctt caaagccgaa gaagaaggcg gacaccatca cgaccaccat 360
cacgaccacg atcatgacca cgaaggacac caccacgacc acggcgaata tgacccccac 420
gtctggaacg accctgttct tatgtccgac tatgccccaa acgtcgctga aaccctgata 480
aaggccgatc ccgaaggcga agtttattat caacaacgct tggcaacta ccaaatgcag 540
cttaaaaaaac tgcacagcga cgacacaagcc gcattaatg cggccctgc cgccaaacgc 600
aaagtccctga cggggcacga cgcatttcc tacatggca accgctacaa catcagcttc 660
atcgccccgc aaggcgtgag cagcgaagcc gagccgtccg ccaaacaagt cgccgccatc 720

atccggcaaa tcaaacgcga aggcatcaa gccgtattta ccgaaaatat caaagacacc 780
cgcattttg accgcattcg caaagaaacc ggcgtcaacg tcagcggcaa actgtattcc 840
gacgcactcg gcaacgcgcc cgccagacacc tacatcggca tgtaccgcca caacgtcgaa 900
gccttaccca acgcgtgaa gcaataa 927

<210> 1152

<211> 308

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1152

Met Lys His Leu Lys Leu Thr Leu Ile Ala Ala Leu Leu Ala Thr Ala
1 5 10 15

Ala Thr Ala Ala Pro Leu Pro Val Val Thr Ser Phe Ser Ile Leu Gly
20 25 30

Asp Val Ala Lys Gln Ile Gly Gly Glu Arg Val Ala Val Gln Ser Leu
35 40 45

Val Gly Ala Asn Gln Asp Thr His Ala Tyr His Met Thr Ser Gly Asp
50 55 60

Ile Lys Lys Ile Arg Ser Ala Lys Leu Val Leu Leu Asn Gly Leu Gly
65 70 75 80

Leu Glu Ala Ala Asp Ile Gln Arg Ala Val Lys Gln Ser Lys Val Ser
85 90 95

Tyr Ala Glu Ala Thr Lys Gly Ile Gln Pro Leu Lys Ala Glu Glu Glu
100 105 110

Gly Gly His His His Asp His His Asp His Asp His Asp His Glu
115 120 125

Gly His His His Asp His Gly Glu Tyr Asp Pro His Val Trp Asn Asp
130 135 140

Pro Val Leu Met Ser Asp Tyr Ala Gln Asn Val Ala Glu Thr Leu Ile
145 150 155 160

Lys Ala Asp Pro Glu Gly Lys Val Tyr Tyr Gln Gln Arg Leu Gly Asn
165 170 175

Tyr Gln Met Gln Leu Lys Lys Leu His Ser Asp Ala Gln Ala Ala Phe
180 185 190

Asn Ala Val Pro Ala Ala Lys Arg Lys Val Leu Thr Gly His Asp Ala
195 200 205

Phe Ser Tyr Met Gly Asn Arg Tyr Asn Ile Ser Phe Ile Ala Pro Gln
210 215 220

Gly Val Ser Ser Glu Ala Glu Pro Ser Ala Lys Gln Val Ala Ala Ile
225 230 235 240

Ile Arg Gln Ile Lys Arg Glu Gly Ile Lys Ala Val Phe Thr Glu Asn
245 250 255

Ile Lys Asp Thr Arg Met Val Asp Arg Ile Ala Lys Glu Thr Gly Val
260 265 270

Asn Val Ser Gly Lys Leu Tyr Ser Asp Ala Leu Gly Asn Ala Pro Ala
275 280 285

Asp Thr Tyr Ile Gly Met Tyr Arg His Asn Val Glu Ala Leu Thr Asn
290 295 300

Ala Met Lys Gln
305

<210> 1153
<211> 915
<212> DNA
<213> Neisseria meningitidis

<400> 1153
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ccccgtccgg ttgttaaccag cttagcatt tttaggcgacg tagccaaaca aatcgccgga 120
gagcgcgtat ccatacaaaag tttggtcgga gccaaccaag atacgcacgc ctatcatatg 180
accagtggcg acattaaaaaa aatccgcagt gcaaaaactcg tcctgctcaa cggttagga 240
cttgaagctg ccgatgtgca acgcgcgtc aaacaaagca aagtatccta taccgaagcg 300
acccaaaggca tccaaacctt caaaagccgaa gaagaaggcg gacaccatca cgaccacgt 360
catgaccacg aaggacacca ccatgaccac ggcgaatatg accccgcacgt ctggaacgac 420
cccggtcccta tgtccgccta tgcccaaaac gttgccaag ccctgataaa ggccgatccc 480
gaaggccaaag tttattatca acaacgcctt ggcaactacc aaatgcagct caaaaaactg 540
cacagcgcacg cacaagccgc atttaatgcc gtccctgctg ccaaacgc当地 agtccctgacc 600
gggcacgatg ccttttccata tatggccaaa cgttaccata tcgaattcat cgccccgcaa 660
ggcgtgagca gcgaaaggccga gccttcggcc aaacaagtcg cgc当地ccatcat cc当地acaatc 720
aaacgc当地ag gcatcaaaggc cgtcttacc gaaaacatca aggacacccg tatgttgac 780
cgtatcgccaa aagaaaccgg tgtcaacgtc agcggccaaac tgtattccga cgc当地ctcggc 840
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gc当地atgaaagc aataaa 915

<210> 1154
<211> 304
<212> PRT
<213> Neisseria meningitidis

<400> 1154
Met Lys His Leu Lys Leu Thr Leu Ile Ala Ala Leu Leu Thr Ala Ser
1 5 10 15

Ala Thr Ala Ala Pro Leu Pro Val Val Thr Ser Phe Ser Ile Leu Gly
20 25 30

Asp Val Ala Lys Gln Ile Gly Gly Glu Arg Val Ser Ile Gln Ser Leu
35 40 45

Val Gly Ala Asn Gln Asp Thr His Ala Tyr His Met Thr Ser Gly Asp

50	55	60	
Ile Lys Lys Ile Arg Ser Ala Lys Leu Val	Leu Leu Asn Gly Leu Gly		
65	70	75	80
Leu Glu Ala Ala Asp Val Gln Arg Ala Val	Lys Gln Ser Lys Val Ser		
85	90	95	
Tyr Thr Glu Ala Thr Lys Gly Ile Gln Pro	Leu Lys Ala Glu Glu Glu		
100	105	110	
Gly Gly His His His Asp His Asp His Glu	Gly His His His		
115	120	125	
Asp His Gly Glu Tyr Asp Pro His Val Trp	Asn Asp Pro Val Leu Met		
130	135	140	
Ser Ala Tyr Ala Gln Asn Val Ala Lys Ala	Leu Ile Lys Ala Asp Pro		
145	150	155	160
Glu Gly Lys Val Tyr Tyr Gln Gln Arg	Leu Gly Asn Tyr Gln Met Gln		
165	170	175	
Leu Lys Lys Leu His Ser Asp Ala Gln Ala	Ala Phe Asn Ala Val Pro		
180	185	190	
Ala Ala Lys Arg Lys Val Leu Thr Gly His	Asp Ala Phe Ser Tyr Met		
195	200	205	
Gly Lys Arg Tyr His Ile Glu Phe Ile Ala	Pro Gln Gly Val Ser Ser		
210	215	220	
Glu Ala Glu Pro Ser Ala Lys Gln Val Ala	Ala Ile Ile Arg Gln Ile		
225	230	235	240
Lys Arg Glu Gly Ile Lys Ala Val Phe Thr	Glu Asn Ile Lys Asp Thr		
245	250	255	
Arg Met Val Asp Arg Ile Ala Lys Glu Thr	Gly Val Asn Val Ser Gly		
260	265	270	
Lys Leu Tyr Ser Asp Ala Leu Gly Asn Ala	Pro Ala Asp Thr Tyr Ile		
275	280	285	
Gly Met Tyr Arg His Asn Ile Lys Ala Leu	Thr Asn Ala Met Lys Gln		
290	295	300	

<210> 1155
<211> 927
<212> DNA
<213> Neisseria meningitidis

<400> 1155

atgaaacacc ccaaactcac ctttatcgcc gcattgctga ccactgccgc aactgccgcc 60
cccctgccgg ttgttaaccag cttcagcatt ttaggcgacg tagccaaaca aatcgccgga 120
gagcgcgtat ccatacaaaag tttggtcgga gccaaccaag atacgcacgc ctatcatatg 180
accagcggcg acattaaaaa aatccgcagt gcaaaaactcg tcctgattaa cggtttagga 240
cttgaagctg ccgacatcca acgtgccgtc aaacagagca aagtatccta tgccgaagcg 300
accaaaggca tccaaacctt caaagccgaa gaagaaggcg gacaccatca cgaccacgt 360
catgaccacg accatgacca cgaaggacac caccacgacc acggcgaata tgacccccac 420
gtcttggaaacg accccgtcct tatgtccgccc tatgcccggaa acgtcgccga agccctgata 480
aaggccgacc ccgaaggcaa agtttattat caacaacgct tggcaacta ccaaatgcag 540
ctcaaaaaac tgcacagtga cgcacaagcc gcatttaatg ccgtccctgc cgccaaacgc 600
aaagtccctga ccgggcacga tgcctttcc tatatggca aacgttacca tatgaattc 660
atcgccccac aaggtgttag cagcgaagcc gagccttcag ccaaacaagt cgccgcccattc 720
atccgacaaa tcaaacgcga aggcatcaaa gccgtattta ccgaaaatat caaagacacc 780
cgcatggttg accgcacatgc caaagaaacc ggtgtcaacg tcagcggccaa actgtattcc 840
gacgcactcg gcaacgcacc cgcagacacc tacatcgca tgtaccgcca caacatcaaa 900
gccttaacca acgcgatgaa gcaataa 927

<210> 1156

<211> 308

<212> PRT

<213> Neisseria meningitidis

<400> 1156

Met Lys His Pro Lys Leu Thr Leu Ile Ala Ala Leu Leu Thr Thr Ala
1 5 10 15

Ala Thr Ala Ala Pro Leu Pro Val Val Thr Ser Phe Ser Ile Leu Gly
20 25 30

Asp Val Ala Lys Gln Ile Gly Gly Glu Arg Val Ser Ile Gln Ser Leu
35 40 45

Val Gly Ala Asn Gln Asp Thr His Ala Tyr His Met Thr Ser Gly Asp
50 55 60

Ile Lys Lys Ile Arg Ser Ala Lys Leu Val Leu Ile Asn Gly Leu Gly
65 70 75 80

Leu Glu Ala Ala Asp Ile Gln Arg Ala Val Lys Gln Ser Lys Val Ser
85 90 95

Tyr Ala Glu Ala Thr Lys Gly Ile Gln Pro Leu Lys Ala Glu Glu Glu
100 105 110

Gly Gly His His His Asp His Asp His Asp His Asp His Glu
115 120 125

Gly His His His Asp His Gly Glu Tyr Asp Pro His Val Trp Asn Asp
130 135 140

Pro Val Leu Met Ser Ala Tyr Ala Gln Asn Val Ala Glu Ala Leu Ile
145 150 155 160

Lys Ala Asp Pro Glu Gly Lys Val Tyr Tyr Gln Gln Arg Leu Gly Asn
165 170 175

Tyr Gln Met Gln Leu Lys Lys Leu His Ser Asp Ala Gln Ala Ala Phe
 180 185 190
 Asn Ala Val Pro Ala Ala Lys Arg Lys Val Leu Thr Gly His Asp Ala
 195 200 205
 Phe Ser Tyr Met Gly Lys Arg Tyr His Ile Glu Phe Ile Ala Pro Gln
 210 215 220
 Gly Val Ser Ser Glu Ala Glu Pro Ser Ala Lys Gln Val Ala Ala Ile
 225 230 235 240
 Ile Arg Gln Ile Lys Arg Glu Gly Ile Lys Ala Val Phe Thr Glu Asn
 245 250 255
 Ile Lys Asp Thr Arg Met Val Asp Arg Ile Ala Lys Glu Thr Gly Val
 260 265 270
 Asn Val Ser Gly Lys Leu Tyr Ser Asp Ala Leu Gly Asn Ala Pro Ala
 275 280 285
 Asp Thr Tyr Ile Gly Met Tyr Arg His Asn Ile Lys Ala Leu Thr Asn
 290 295 300
 Ala Met Lys Gln
 305

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<210> 1157  
<211> 828  
<212> DNA  
<213> Neisseria gonorrhoeae
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<400> 1157
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gggcccgccg tcggctacat gtttggccggc ttgagcctgc cgcgtatggg tggggccgg 180
tttgcggccg gtatgctgat ggcgctgctt gccggactcg tcagccgctt taccaccctg 240
aaagaagatg ccaactttgc cgcctttac ctgagcagcc tcgcacatcg cgtaatccctc 300
atcagcaaaa acggcagcag cgtcgattta ctccaccttc ttttcggatc tggcttgcc 360
gtcgatattc cccgactgca actcatcgcc gccgtctccg gcctcacgct cattaccctt 420
gccgtcatct accggccccct ggtgcttagaa agcatagacc ccctttccct caagtccgctc 480
aacggcaaaag gcgggctttg gcacgtcatt ttccctcatcc tcgtcgatc gaacctcgta 540
tccggcttcc aagctctcggt catcctgtat tcggtcggaa ttatgtatgct gcccggcatt 600
accggccgtt tatgggcaag aaatatgggg acgctcattt tggtgtccgt cctcatcgcc 660
ctttttcggtt gtttgcattt tcctaccaca tcgaaatccc ttccggccccc 720
gccatcatcc tctgttgcag cgtcctttat ctttttcgg tcataactcggtt caaagaaggc 780
ggcatcttgc ccaaatggtt caaaaaccac cgccaccacca ccacccgtt 828
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<210> 1158
<211> 275
<212> PRT
<213> *Neisseria gonorrhoeae*

<400> 1158
Met His Tyr Ala Leu Ala Ser Val Phe Cys Leu Ser Leu Ser Ala Ala

1	5	10	15
Pro Val Gly Val Phe Leu Val Met Arg Arg Met Ser Leu Ile Gly Asp			
20	25	30	
Ala Leu Ser His Ala Val Leu Pro Gly Ala Ala Val Gly Tyr Met Phe			
35	40	45	
Ala Gly Leu Ser Leu Pro Ala Met Gly Val Gly Gly Phe Ala Ala Gly			
50	55	60	
Met Leu Met Ala Leu Leu Ala Gly Leu Val Ser Arg Phe Thr Thr Leu			
65	70	75	80
Lys Glu Asp Ala Asn Phe Ala Ala Phe Tyr Leu Ser Ser Leu Ala Ile			
85	90	95	
Gly Val Ile Leu Ile Ser Lys Asn Gly Ser Ser Val Asp Leu Leu His			
100	105	110	
Leu Leu Phe Gly Ser Val Leu Ala Val Asp Ile Pro Ala Leu Gln Leu			
115	120	125	
Ile Ala Ala Val Ser Gly Leu Thr Leu Ile Thr Leu Ala Val Ile Tyr			
130	135	140	
Arg Pro Leu Val Leu Glu Ser Ile Asp Pro Leu Phe Leu Lys Ser Val			
145	150	155	160
Asn Gly Lys Gly Gly Leu Trp His Val Ile Phe Leu Ile Leu Val Val			
165	170	175	
Met Asn Leu Val Ser Gly Phe Gln Ala Leu Gly Ile Leu Met Ser Val			
180	185	190	
Gly Ile Met Met Leu Pro Ala Ile Thr Ala Arg Leu Trp Ala Arg Asn			
195	200	205	
Met Gly Thr Leu Ile Leu Leu Ser Val Leu Ile Ala Leu Phe Cys Gly			
210	215	220	
Leu Ile Gly Leu Leu Ile Ser Tyr His Ile Glu Ile Pro Ser Gly Pro			
225	230	235	240
Ala Ile Ile Leu Cys Cys Ser Val Leu Tyr Leu Phe Ser Val Ile Leu			
245	250	255	
Gly Lys Glu Gly Gly Ile Leu Pro Lys Trp Phe Lys Asn His Arg His			
260	265	270	
His Thr Thr			
275			

<210> 1159
<211> 792

<212> DNA

<213> Neisseria meningitidis

<400> 1159

atgcgctacg ccctcgcatc cgtttctgc ctgtccctca gtgccgcacc cgtcggcgta 60
ttcctcgta tgcccgat gaggctgata ggcgacgcat tgagccacgc cgtcctgccc 120
gggcccgcc tcggctacat gtttgcgc ttgagcctgc cgcgcattggg tttggcgcc 180
gtagccgcag gcatgctgat ggcactgct gccggactcg tcagccgctt caccaccctg 240
aaagaagatg ccaacttgc cgcctttat ctcagcagcc tcgccccatcg 300
gtcagcaaaa acgggagcag cgtcgatttg ctccacctcc tttcggctc tgtacttgcc 360
gtcgatattc ctgcccgtca gctcatcgcc gccgtctcca gcctcacgct cattaccctt 420
gccgtcatct accgcccgtc cgtaactcgaa agcatcgacc ccctgttttcaaatccgtc 480
ggcggcaaaag gcgggcttg gcacgtcctc tttctcgatc tggtcgtcat gaacctcgta 540
tccggcttca aagccctcg cacactcatg tccgtcgac tcatgatgct gccagccatt 600
accgcccgc tggggcga gcatatggc gcactcatcc tcctatccgt tctgacagcc 660
ctgctgtcg gctttagcgg actgctcatt tcctaccaca tcgaaattcc ttccggtccc 720
gccatcatcc tctgttcag cgtcctttat ctctttccg tcataactcgaaagaaggc 780
ggcattctga cc 792

<210> 1160

<211> 264

<212> PRT

<213> Neisseria meningitidis

<400> 1160

Met Arg Tyr Ala Leu Ala Ser Val Phe Cys Leu Ser Leu Ser Ala Ala
1 5 10 15

Pro Val Gly Val Phe Leu Val Met Arg Arg Met Ser Leu Ile Gly Asp
20 25 30

Ala Leu Ser His Ala Val Leu Pro Gly Ala Ala Val Gly Tyr Met Phe
35 40 45

Ala Gly Leu Ser Leu Pro Ala Met Gly Leu Gly Gly Val Ala Ala Gly
50 55 60

Met Leu Met Ala Leu Leu Ala Gly Leu Val Ser Arg Phe Thr Thr Leu
65 70 75 80

Lys Glu Asp Ala Asn Phe Ala Ala Phe Tyr Leu Ser Ser Leu Ala Ile
85 90 95

Gly Val Val Leu Val Ser Lys Asn Gly Ser Ser Val Asp Leu Leu His
100 105 110

Leu Leu Phe Gly Ser Val Leu Ala Val Asp Ile Pro Ala Leu Gln Leu
115 120 125

Ile Ala Ala Val Ser Ser Leu Thr Leu Ile Thr Leu Ala Val Ile Tyr
130 135 140

Arg Pro Leu Val Leu Glu Ser Ile Asp Pro Leu Phe Leu Lys Ser Val
145 150 155 160

Gly Gly Lys Gly Gly Leu Trp His Val Leu Phe Leu Val Leu Val Val

165	170	175
Met Asn Leu Val Ser Gly Phe Gln Ala Leu Gly Thr Leu Met Ser Val		
180	185	190
Gly Leu Met Met Leu Pro Ala Ile Thr Ala Arg Leu Trp Ala Lys His		
195	200	205
Met Gly Ala Leu Ile Leu Leu Ser Val Leu Thr Ala Leu Leu Cys Gly		
210	215	220
Leu Ser Gly Leu Leu Ile Ser Tyr His Ile Glu Ile Pro Ser Gly Pro		
225	230	235
Ala Ile Ile Leu Cys Cys Ser Val Leu Tyr Leu Phe Ser Val Ile Leu		
245	250	255
Gly Lys Glu Gly Gly Ile Leu Thr		
260		

<210> 1161
 <211> 828
 <212> DNA
 <213> Neisseria meningitidis

<400> 1161
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 ggtgccgcgc tcggctacat gtttgccggc ttaaggctgc cccatggg tttggccggc 180
 gtagccgcag gtatgcgtat ggcactgctt gccggactcg tcagccgcctt caccaccctg 240
 aaagaagatg ccaactttgc cgccttttat ctcagcagcc tcgccatcggt tgtagtcctc 300
 gtcagcaaaa acggcagcag cgtcgatttg ctccacctcc ttttcggctc cgtacttgcc 360
 gtcgatattc ctgcctcgca actcatcgcc gccgtatcca ccctcacact gcttaccctt 420
 gccgtcatct accgcccgtc cgtactcgaa agcatcgacc ccctgttttcaaattctgtc 480
 ggcggcaaaag gcgggctttg gcacgtcctc tttctcgatcc tggtcgtcat gaacctcgta 540
 tccggctttc aagccctcgga cacactcatg tccgtcgac ttatgtatgtt gccagccatt 600
 accggccgc tatgggcgaa gcacatgggc gcactcatcc tcctatccgt tctgacagcc 660
 ctgctgtcgcg gcttgagcgg actgctcatt tcctaccaca tcgaaattcc ttccggtccc 720
 gccatcatcc tctgttgcag cgtccctttat ctctttccg tcataactcgaa caaagaaggc 780
 ggcattctga ccaaattggct caaaaaccac cgccaccacaca ccacctga 828

<210> 1162
 <211> 275
 <212> PRT
 <213> Neisseria meningitidis

<400> 1162
 Met Arg Tyr Ala Leu Ala Ser Val Phe Cys Leu Ser Leu Ser Ala Ala
 1 5 10 15

Pro Val Gly Val Phe Leu Val Met Arg Arg Met Ser Leu Ile Gly Asp
 20 25 30

Ala Leu Ser His Ala Val Leu Pro Gly Ala Ala Val Gly Tyr Met Phe
 35 40 45

Ala Gly Leu Ser Leu Pro Ala Met Gly Leu Gly Gly Val Ala Ala Gly
50 55 60

Met Leu Met Ala Leu Leu Ala Gly Leu Val Ser Arg Phe Thr Thr Leu
65 70 75 80

Lys Glu Asp Ala Asn Phe Ala Ala Phe Tyr Leu Ser Ser Leu Ala Ile
85 90 95

Gly Val Val Leu Val Ser Lys Asn Gly Ser Ser Val Asp Leu Leu His
100 105 110

Leu Leu Phe Gly Ser Val Leu Ala Val Asp Ile Pro Ala Leu Gln Leu
115 120 125

Ile Ala Ala Val Ser Thr Leu Thr Leu Leu Thr Leu Ala Val Ile Tyr
130 135 140

Arg Pro Leu Val Leu Glu Ser Ile Asp Pro Leu Phe Leu Lys Ser Val
145 150 155 160

Gly Gly Lys Gly Gly Leu Trp His Val Leu Phe Leu Val Leu Val Val
165 170 175

Met Asn Leu Val Ser Gly Phe Gln Ala Leu Gly Thr Leu Met Ser Val
180 185 190

Gly Leu Met Met Leu Pro Ala Ile Thr Ala Arg Leu Trp Ala Lys His
195 200 205

Met Gly Ala Leu Ile Leu Leu Ser Val Leu Thr Ala Leu Leu Cys Gly
210 215 220

Leu Ser Gly Leu Leu Ile Ser Tyr His Ile Glu Ile Pro Ser Gly Pro
225 230 235 240

Ala Ile Ile Leu Cys Cys Ser Val Leu Tyr Leu Phe Ser Val Ile Leu
245 250 255

Gly Lys Glu Gly Gly Ile Leu Thr Lys Trp Leu Lys Asn His Arg His
260 265 270

His Thr Thr
275

<210> 1163

<211> 654

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1163

atgggattgg gtagtggaaat cggcaagctg attgtggctc ttttggtgct gatcaatccg 60
tttagcgctgt tgtcgttta ccttgacctg accaacggac acagcacgaa ggagcgcagg 120
aagggtcgccgc ggacggccgc cgtcgcccgtg ttgccgtga ttgcggattt tgcgctgatc 180

ggcgggtgcgc tattgaaggtt tttgggcattc agcgtcggtt cgtttcaggt cggcggcggg 240
attttggtgc tgctgatcgccatttcgatg atgaacggca acgacaatcc cgccaagcag 300
aatctcgccg cgcagccgaa aacggggcaa gcgcgccccg cccgcaatgc aggggcgatt 360
gccgtcggtgc ccatcgccat accgatcacc atcggtccgg gcggtatttc gacttgatt 420
atttatgctt cggcagccaa aacgtacagc gatatcgccg tgattatcgccgcgggtttt 480
gtggtcagtg cgatttggta tgccattttatcggtgc gaaaggtag ccgcctgctg 540
ggcgcgacgg ggctgacgat tttaaacccgc attatggta tgatgctggc ggccgtatcg 600
gtggagatta ttgtgtcggtt actgaaaacg atattccgc aactggcagg ttga 654

<210> 1164

<211> 217

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1164

Met Gly Leu Gly Met Glu Ile Gly Lys Leu Ile Val Ala Leu Leu Val
1 5 10 15

Leu Ile Asn Pro Phe Ser Ala Leu Ser Leu Tyr Leu Asp Leu Thr Asn
20 25 30

Gly His Ser Thr Lys Glu Arg Arg Lys Val Ala Arg Thr Ala Ala Val
35 40 45

Ala Val Phe Ala Val Ile Ala Val Phe Ala Leu Ile Gly Gly Ala Leu
50 55 60

Leu Lys Val Leu Gly Ile Ser Val Gly Ser Phe Gln Val Gly Gly Gly
65 70 75 80

Ile Leu Val Leu Ile Ala Ile Ser Met Met Asn Gly Asn Asp Asn
85 90 95

Pro Ala Lys Gln Asn Leu Gly Ala Gln Pro Glu Thr Gly Gln Ala Arg
100 105 110

Pro Ala Arg Asn Ala Gly Ala Ile Ala Val Val Pro Ile Ala Ile Pro
115 120 125

Ile Thr Ile Gly Pro Gly Gly Ile Ser Thr Val Ile Ile Tyr Ala Ser
130 135 140

Ala Ala Lys Thr Tyr Ser Asp Ile Ala Leu Ile Ile Ala Ala Gly Leu
145 150 155 160

Val Val Ser Ala Ile Cys Tyr Ala Ile Leu Ile Val Ala Gly Lys Val
165 170 175

Ser Arg Leu Leu Gly Ala Thr Gly Leu Thr Ile Leu Asn Arg Ile Met
180 185 190

Gly Met Met Leu Ala Ala Val Ser Val Glu Ile Ile Val Ser Gly Leu
195 200 205

Lys Thr Ile Phe Pro Gln Leu Ala Gly

210

215

<210> 1165

<211> 654

<212> DNA

<213> Neisseria meningitidis

<400> 1165

atgggattgg gcatggaaat cggcaagctg attgtggctt ttttggtgct gattaatccg 60
tttagcgcgt tgtcgctta ccttgacctg accaacgggc acagcacgaa ggagcgcagg 120
aaggtcgcgc ggacggccgc cgttgccgtg tttgccgtga ttgcggtatt tgcgctgatc 180
ggcgtacgc tgctgaaggt tttggcattc agcgtcggtt cggttcaggc cggccggcggg 240
attttgtgc tgctgatcgc catttcgatg atgaacggca acgacaatcc cgccaagcag 300
aatctcgccg cgcagccgga aacggggcag gcgcgccccg cccgcaatgc cggagcgtt 360
gccgtcgatc ccatcgccat accgatcacc atcgccccgg gcggtatttc gaccgtgatt 420
atttacgctt cggcgctaa aacatacggc gacatcggt tgattatcgc ggccgggttt 480
gtggtcagtg cgattgtta tgccatattta atcggtcgcc ggaaggtcag ccgcctgctg 540
ggcgcgacgg ggctgacgat tttaaacccg attatggta tgatgctggc ggcggtatcg 600
gtggagatta ttgtgtcggg actgaaaacg atattccgc aactggcagg ttga 654

<210> 1166

<211> 217

<212> PRT

<213> Neisseria meningitidis

<400> 1166

Met Gly Leu Gly Met Glu Ile Gly Lys Leu Ile Val Ala Phe Leu Val
1 5 10 15

Leu Ile Asn Pro Phe Ser Ala Leu Ser Leu Tyr Leu Asp Leu Thr Asn
20 25 30

Gly His Ser Thr Lys Glu Arg Arg Lys Val Ala Arg Thr Ala Ala Val
35 40 45

Ala Val Phe Ala Val Ile Ala Val Phe Ala Leu Ile Gly Gly Thr Leu
50 55 60

Leu Lys Val Leu Gly Ile Ser Val Gly Ser Phe Gln Val Gly Gly Gly
65 70 75 80

Ile Leu Val Leu Ile Ala Ile Ser Met Met Asn Gly Asn Asp Asn
85 90 95

Pro Ala Lys Gln Asn Leu Gly Ala Gln Pro Glu Thr Gly Gln Ala Arg
100 105 110

Pro Ala Arg Asn Ala Gly Ala Ile Ala Val Val Pro Ile Ala Ile Pro
115 120 125

Ile Thr Ile Gly Pro Gly Gly Ile Ser Thr Val Ile Ile Tyr Ala Ser
130 135 140

Ala Ala Lys Thr Tyr Gly Asp Ile Ala Leu Ile Ile Ala Ala Gly Leu

145 150 155 160
Val Val Ser Ala Ile Cys Tyr Ala Ile Leu Ile Val Ala Gly Lys Val
165 170 175
Ser Arg Leu Leu Gly Ala Thr Gly Leu Thr Ile Leu Asn Arg Ile Met
180 185 190
Gly Met Met Leu Ala Ala Val Ser Val Glu Ile Ile Val Ser Gly Leu
195 200 205
Lys Thr Ile Phe Pro Gln Leu Ala Gly
210 215

<210> 1167
<211> 654
<212> DNA
<213> Neisseria meningitidis

<400> 1167
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tttagcgcgt tgtcgctta ccttgacctg accaacgggc acagcacgaa ggagcgcagg 120
aaggctcgccg gcacggccgc ctggccgtg ttgcgcgtga tgccgtatt tgccgtatc 180
ggcggtaacgc tgctgaaggt ttggggcatc agcgtcggtt cgtttcaggt cggcggcgg 240
attttgtgtt tgctgattgc catttcgatg atgaacggca acgacaatcc cgccaagcag 300
aatctcgccg cgcagccgg aacggggcag gtgcgccccg cccgcaatgc cggagcgtt 360
gccgtcggtc ccattcgccat accgatcacc atcgccccgg gcggtatattc gaccgtgatt 420
atttacgtt cggcggctaa aacatacggc gacatcggt tgattatcgc ggccgtttg 480
gtggtcagt cgtttgtta tgccattttt atcggtggcc ggaaggcag ccgcctgctg 540
gttgcgacgg ggctgacgt tttaaacgt atcatgggt aactgctggc ggccgtatcg 600
gtggagatta ttgtgtcggg actgaaaatg atattccgc aactggcagg ttga 654

<210> 1168
<211> 217
<212> PRT
<213> Neisseria meningitidis

<400> 1168
Met Gly Leu Gly Met Glu Ile Gly Lys Leu Ile Val Ala Phe Leu Val
1 5 10 15
Leu Ile Asn Pro Phe Ser Ala Leu Ser Leu Tyr Leu Asp Leu Thr Asn
20 25 30
Gly His Ser Thr Lys Glu Arg Arg Lys Val Ala Arg Thr Ala Ala Val
35 40 45
Ala Val Phe Ala Val Ile Ala Val Phe Ala Leu Ile Gly Gly Thr Leu
50 55 60
Leu Lys Val Leu Gly Ile Ser Val Gly Ser Phe Gln Val Gly Gly Gly
65 70 75 80
Ile Leu Val Leu Leu Ile Ala Ile Ser Met Met Asn Asn Gly Asn Asp Asn
85 90 95

Pro Ala Lys Gln Asn Leu Gly Ala Gln Pro Glu Thr Gly Gln Val Arg
100 105 110

Pro Ala Arg Asn Ala Gly Ala Ile Ala Val Val Pro Ile Ala Ile Pro
115 120 125

Ile Thr Ile Gly Pro Gly Gly Ile Ser Thr Val Ile Ile Tyr Ala Ser
130 135 140

Ala Ala Lys Thr Tyr Gly Asp Ile Ala Leu Ile Ile Ala Ala Gly Leu
145 150 155 160

Val Val Ser Ala Ile Cys Tyr Ala Ile Leu Ile Val Ala Gly Lys Val
165 170 175

Ser Arg Leu Leu Gly Ala Thr Gly Leu Thr Ile Leu Asn Arg Ile Met
180 185 190

Gly Met Met Leu Ala Ala Val Ser Val Glu Ile Ile Val Ser Gly Leu
195 200 205

Lys Met Ile Phe Pro Gln Leu Ala Gly
210 215

<210> 1169
<211> 429
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1169
atgaactttg ctttatccgt catcacattt accctcgctt ctttcctgcc cgtcccgct 60
gccggAACCG ccgtctttac ttggaaagac ggcggcggca acagctattc ggatgtgccg 120
aaacagcttc atcccacca gagccaaatc ctcaacctgc ggacgctcca aaccaaaccg 180
gcggtaagc ccaaacctgc cgtcgatacg aatgcggaca gtgcgaaggaa 240
gatatcgccg agaaaaacgg gcagcttgag gaagaaaaaga aaaaaattgc cgaaaccgaa 300
ccgcagaaca aagaagaaaa ctgccggatt tcaaaaatga acctgaaggc ggtggaaac 360
tcaaatgcga aaaacaagga tgatttgatc cgtaaataca ataacgcgt aaacaaatac 420
tgccgttaa 429

<210> 1170
<211> 142
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1170
Met Asn Phe Ala Leu Ser Val Ile Thr Phe Thr Leu Ala Ser Phe Leu
1 5 10 15

Pro Val Pro Pro Ala Gly Thr Ala Val Phe Thr Trp Lys Asp Gly Gly
20 25 30

Gly Asn Ser Tyr Ser Asp Val Pro Lys Gln Leu His Pro Asp Gln Ser
35 40 45

Gln Ile Leu Asn Leu Arg Thr Leu Gln Thr Lys Pro Ala Val Lys Pro
50 55 60

Lys Pro Ala Val Asp Thr Asn Ala Asp Ser Ala Lys Glu Asn Glu Lys
65 70 75 80

Asp Ile Ala Glu Lys Asn Gly Gln Leu Glu Glu Glu Lys Lys Ile
85 90 95

Ala Glu Thr Glu Arg Gln Asn Lys Glu Glu Asn Cys Arg Ile Ser Lys
100 105 110

Met Asn Leu Lys Ala Val Gly Asn Ser Asn Ala Lys Asn Lys Asp Asp
115 120 125

Leu Ile Arg Lys Tyr Asn Asn Ala Val Asn Lys Tyr Cys Arg
130 135 140

<210> 1171

<211> 435

<212> DNA

<213> Neisseria meningitidis

<400> 1171

atgaactttg cttagatccgt cattatgttg accctcgctt ctttcctgcc cgtccgcct 60
gccggagccg ccgtctttac ttggaggac ggcggcggca acagctattc ggatgtaccg 120
aaacagcttc atcccgacca aagccaaatc ttaaacctgc gagcgcgcaca aaccaaaccg 180
gcggtaaaac ccgccaagc cgacgcaggg aagcgcacag acggcgcggc acagaaaaac 240
aatcccgaca ctgcccggaaa aaaccggcag cttgagggaaag aaaagaaaaag aattgccc 300
accgaacggc agaacaaaga agaaaaactgc cggatttcaa aatgaacct gaaggcggtg 360
gaaaattcaa atgaaaaaaaaa caaggatgtt tgattcggaa aatacaataa cgccgtaaac 420
aaatactgcc gttaa 435

<210> 1172

<211> 144

<212> PRT

<213> Neisseria meningitidis

<400> 1172

Met Asn Phe Ala Leu Ser Val Ile Met Leu Thr Leu Ala Ser Phe Leu
1 5 10 15

Pro Val Pro Pro Ala Gly Ala Ala Val Phe Thr Trp Lys Asp Gly Gly
20 25 30

Gly Asn Ser Tyr Ser Asp Val Pro Lys Gln Leu His Pro Asp Gln Ser
35 40 45

Gln Ile Leu Asn Leu Arg Thr Arg Gln Thr Lys Pro Ala Val Lys Pro
50 55 60

Ala Gln Ala Asp Ala Gly Lys Arg Thr Asp Gly Ala Ala Gln Glu Asn
65 70 75 80

Asn Pro Asp Thr Ala Glu Lys Asn Arg Gln Leu Glu Glu Lys Lys
85 90 95

Arg Ile Ala Glu Thr Glu Arg Gln Asn Lys Glu Glu Asn Cys Arg Ile
100 105 110

Ser Lys Met Asn Leu Lys Ala Val Gly Asn Ser Asn Ala Lys Asn Lys
115 120 125

Asp Asp Leu Ile Arg Lys Tyr Asn Asn Ala Val Asn Lys Tyr Cys Arg
130 135 140

<210> 1173

<211> 435

<212> DNA

<213> Neisseria meningitidis

<400> 1173

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aaacagcttc atccccacca aagccaaatc ttaaacctgc ggacgcgcaca aaccaaaccg 180
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435

<210> 1174

<211> 144

<212> PRT

<213> Neisseria meningitidis

<400> 1174

Met Asn Phe Ala Leu Ser Val Ile Met Leu Thr Leu Ala Ser Phe Leu
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20 25 30

Gly Asn Ser Tyr Ser Asp Val Pro Lys Gln Leu His Pro Asp Gln Ser
35 40 45

Gln Ile Leu Asn Leu Arg Thr Arg Gln Thr Lys Pro Ala Val Lys Pro
50 55 60

Ala Gln Ala Asp Ala Gly Lys Arg Thr Asp Gly Ala Ala Gln Glu Asn
65 70 75 80

Asn Pro Asp Thr Ala Glu Lys Asn Arg Gln Leu Glu Glu Lys Lys
85 90 95

Arg Ile Ala Glu Thr Glu Arg Gln Asn Lys Glu Glu Asn Cys Arg Ile
100 105 110

Ser Lys Met Asn Leu Lys Ala Val Gly Asn Ser Asn Ala Lys Asn Lys
115 120 125

Asp Asp Leu Ile Arg Lys Tyr Asn Asn Ala Val Asn Lys Tyr Cys Arg
130 135 140

<210> 1175

<211> 897

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1175

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<210> 1176

<211> 298

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1176

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20 25 30

Lys Arg Val Ala Gly Phe Ala Phe Ala Phe Glu Ala Phe Ala Gly Phe
35 40 45

Phe Glu Thr Val Phe Leu Lys Ala Phe Phe Leu Glu Thr Phe Ala Ala
50 55 60

Arg Phe Ala Ala Glu Ala Phe Phe Ala Arg Phe Met Ile Ala Ala Pro
65 70 75 80

Ala Ala Gly Phe Pro Ile Ala Pro Ala Ala Phe Ala Phe Arg Leu Ala
 85 90 95

 Ala Cys Gly Phe Ala Phe Ala Gly Arg Leu His Ala Phe Asp Gly Gln
 100 105 110

 Phe Gly Gln Phe Ala Val Asn Val Phe Phe Asp Phe Val Asp Phe Asp
 115 120 125

 Val Phe Val His Phe Gly Lys Arg Asn Arg Asn Thr Arg Ala Ala Cys
 130 135 140

 Ala Ala Gly Ala Pro Asp Ala Val Asp Val Val Phe Arg Leu Phe Arg
 145 150 155 160

 Gln Val Val Val Tyr Asp Val Gly Asn Gly Arg Tyr Val Asn Thr Ala
 165 170 175

 Cys Gly Asn Val Gly Gly Asn Gln Asn Phe Ala Ala Ala Phe Thr Gln
 180 185 190

 Ile Arg Gln Arg Ala Val Ala Pro Ala Leu Arg His Ile Ala Val Gln
 195 200 205

 Ala Val Gly Gly Glu Thr Phe Phe Val Gln Phe Ile Arg Asp Asp Phe
 210 215 220

 Gly His Arg Phe Gly Gly Arg Glu Asn His Thr Leu Val Asp Val Gly
 225 230 235 240

 Ile Ala Gln Asp Val Val Glu Gln Ala Val Phe Val Ala His Ile Val
 245 250 255

 Ala Val Gln Gln Leu Leu Phe Asp Phe Ala Leu Ala Val His Ala Phe
 260 265 270

 Asp Phe Asp Asn Phe Arg Val Phe Gly Gln Phe Ala Arg Gln Phe Ala
 275 280 285

 Asp Cys Ala Val Pro Ser Gly Gly Glu Gln
 290 295

<210> 1177
 <211> 1275
 <212> DNA
 <213> Neisseria meningitidis

<400> 1177
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 accggccggat ttacgatcgc cccagccgccc tttgccttgc ggcttgcggc ctgcggattt 300
 gcgtttgcgg gtcgggttcca tgcccttcgat ggtcagttcg ggcagttttc ggttaatgtt 360
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<210> 1178

<211> 424

<212> PRT

<213> Neisseria meningitidis

<400> 1178

Met Pro Ser Glu Thr Arg Asn Arg Phe Gln Thr Ala Leu Val Tyr Ala
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Ala Gly Trp Gly Leu Ala Val Phe Val Thr Ala Phe Ala Phe Ala Cys
20 25 30

Lys Arg Ile Ala Gly Phe Ala Phe Ala Phe Glu Ala Phe Ala Gly Phe
35 40 45

Phe Glu Thr Val Ser Leu Lys Ala Phe Phe Leu Glu Thr Phe Ala Ala
50 55 60

Arg Phe Ala Ala Glu Ala Phe Phe Ala Arg Phe Met Ile Ala Ala Pro
65 70 75 80

Thr Ala Gly Phe Thr Ile Ala Pro Ala Ala Phe Ala Phe Arg Leu Ala
85 90 95

Ala Cys Gly Phe Ala Phe Ala Gly Arg Phe His Ala Phe Asp Gly Gln
100 105 110

Phe Gly Gln Phe Ser Val Asn Val Phe Phe Asp Phe Val Asp Phe Asp
115 120 125

Val Phe Val His Phe Gly Lys Arg Asn Arg Asn Thr Arg Ala Ala Cys
130 135 140

Ala Ala Gly Ala Pro Asp Ala Val Asp Val Val Phe Arg Leu Phe Arg
145 150 155 160

Gln Val Val Val Asp Asn Val Gly Asn Gly Arg Tyr Val Asp Thr Ala
165 170 175

Cys Gly Asn Ile Gly Gly Asn Gln Asn Phe Ala Ala Phe Thr Gln

180	185	190
Ile His Gln Arg Ala Val Ala Pro Ala Leu Arg His Ile Ala Val Gln		
195	200	205
Ala Val Cys Gly Glu Thr Phe Phe Val Gln Phe Ile Arg Asn Asp Phe		
210	215	220
Gly His Gly Phe Gly Gly Arg Glu Asn His Ala Leu Ile Asp Ile Gly		
225	230	235
Ile Ala Gln Asp Met Ile Glu Gln Ala Val Phe Val Ala His Ile Val		
245	250	255
Ala Val Gln Gln Leu Phe Phe Asp Phe Ala Leu Ile Val His Ala Phe		
260	265	270
Asp Phe Asp Asp Phe Arg Val Phe Gly Gln Phe Ala Arg Gln Phe Ala		
275	280	285
Asp Arg Ala Val Pro Ser Gly Gly Glu Gln Gln Ser Leu Thr Val Ala		
290	295	300
Arg Arg Cys Phe His Asp Gly Phe Asp Val Val Asp Lys Ala His Ile		
305	310	315
Gln His Thr Val Gly Phe Val Gln Asn Gln His Phe Gln Thr Phe Lys		
325	330	335
Ile Asn Phe Ala Ala Leu His Gln Val His Gln Thr Ala Arg Arg Gly		
340	345	350
Asp Asn Gln Ile Asp Arg Phe Ala Gln Gly Thr Gly Leu Val Ala Glu		
355	360	365
Arg Arg Ala Ala Asp Asp Ala Asp Gly Ala Glu Pro Thr His Ile Phe		
370	375	380
Gly Ile Arg Gln Arg Val Phe Leu Asp Leu Ser Arg Gln Phe Ala Gly		
385	390	395
Arg Gly Gln His Gln Ser Thr Arg Ala Phe Ala Arg Phe Phe Ala Ala		
405	410	415
Phe Gly Gln Phe Leu Gln Ser Arg		
420		

<210> 1179
 <211> 1275
 <212> DNA
 <213> Neisseria meningitidis

<400> 1179
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<210> 1180

<211> 424

<212> PRT

<212> PRI
<213> *Neisseria meningitidis*

<400> 1180

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Ala Gly Trp Gly Leu Ala Val Phe Val Thr Ala Phe Ala Phe Ala Cys
 20 25 30

Lys Arg Ile Ala Gly Phe Ala Phe Ala Phe Glu Ala Phe Ala Gly Phe
35 40 45

Phe Glu Thr Val Ser Leu Lys Ala Phe Phe Leu Glu Thr Phe Ala Ala
50 55 60

Arg	Phe	Ala	Ala	Glu	Ala	Phe	Phe	Ala	Arg	Phe	Met	Ile	Ala	Ala	Pro
65				70					75						80

Thr Ala Gly Phe Thr Ile Ala Pro Ala Ala Phe Ala Phe Arg Leu Ala
85 90 95

Ala Cys Gly Phe Ala Phe Ala Gly Arg Phe His Ala Phe Asp Gly Gln
 100 105 110

Phe Gly Gln Phe Ser Val Asn Val Phe Phe Asp Phe Val Asp Phe Asp
 115 120 125

Val Phe Val His Phe Gly Lys Arg Asn Arg Asn Thr Arg Ala Ala Cys
130 135 140

Ala Ala Gly Ala Pro Asp Ala Val Asp Val Val Phe Arg Leu Phe Arg
145 150 155 160

Gln Val Val Val Asp Asn Val Gly Asn Gly Arg Tyr Val Asp Thr Ala
165 170 175

Cys Gly Asn Val Gly Gly Asn Gln Asn Phe Ala Ala Ala Phe Ala Gln
180 185 190

Ile His Gln Arg Ala Val Ala Pro Ala Leu Arg His Ile Ala Val Gln
195 200 205

Ala Val Gly Gly Glu Thr Phe Phe Val Gln Phe Ile Arg Asp Asp Phe
210 215 220

Gly His Gly Phe Gly Gly Arg Glu Asn His Ala Leu Ile Asp Val Gly
225 230 235 240

Ile Ala Gln Asp Met Ile Glu Gln Ala Val Phe Val Ala His Ile Val
245 250 255

Ala Val Gln Gln Leu Phe Phe Asp Phe Ala Leu Val Val His Ala Phe
260 265 270

Asp Phe Asp Asp Phe Arg Val Phe Gly Gln Phe Ala Arg Gln Phe Ala
275 280 285

Asp Arg Ala Val Pro Ser Gly Gly Glu Gln Gln Ser Leu Thr Val Phe
290 295 300

Arg Arg Gly Phe Asp Asp Gly Phe Asp Val Val Asp Lys Ala His Ile
305 310 315 320

Gln His Thr Val Gly Phe Val Gln Asn Gln His Phe Gln Ala Gly Glu
325 330 335

Ile Asp Phe Ala Ala Leu His Gln Val His Gln Thr Ala Arg Arg Gly
340 345 350

Asp Asn Gln Ile Asp Arg Phe Ala Gln Gly Ala Gly Leu Val Ala Glu
355 360 365

Arg Cys Thr Thr Asp Asp Ala Asp Gly Thr Glu Pro Thr His Ile Phe
370 375 380

Gly Ile Arg Gln Arg Val Phe Leu Asp Leu Ser Arg Gln Phe Ala Gly
385 390 395 400

Arg Arg Gln His Gln Arg Ala Arg Ala Phe Ala Arg Phe Phe Ala Ala
405 410 415

Phe Gly Gln Ser Leu Gln Ser Arg
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<210> 1181

<211> 4170

<212> DNA

<213> *Neisseria gonorrhoeae*

<400> 1181
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<210> 1182

211 1389

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1182

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20 25 30

Arg Pro Leu Leu Lys Leu Ser Ala Ala Leu Leu Ser Val Leu Ile Leu
35 40 45

Ala Val Cys Phe Leu Gly Trp Ile Ala Gly Thr Glu Ala Gly Leu Arg
50 55 60

Phe Gly Leu Tyr Gln Ile Pro Ser Trp Phe Gly Val Asn Ile Ser Ser
 65 70 75 80

Gln Asn Leu Lys Gly Thr Leu Leu Asp Gly Phe Asp Gly Asp Asn Trp
85 90 95

Ser Ile Glu Thr Glu Gly Ala Asp Leu Lys Ile Ser Arg Phe Arg Phe
100 105 110

Ala Trp Lys Pro Ser Glu Leu Met Arg Arg Ser Leu His Ile Thr Asp
115 120 125

Ile Ser Ala Gly Asp Ile Ala Ile Val Thr Lys Pro Thr Pro Pro Lys
 130 135 140

Glu Glu Arg Pro Pro Gln Gly Leu Pro Asp Ser Ile Asp Leu Pro Ala
145 150 155 160

Thr Phe Asp Lys Gln Thr Val Tyr Leu Glu Arg Leu Asn Ala Ala Tyr
180 185 190

Arg Tyr Asp Arg Lys Gly His Arg Leu Asp Leu Lys Ala Ala Asp Thr
195 200 205

Pro Trp Ser Ser Ser Gly Ser Ala Ser Val Gly Leu Lys Lys Pro
210 215 220

Phe Ala Leu Asp Thr Ala Ile Tyr Thr Lys Gly Gly Phe Glu Gly Glu
225 230 235 240

Thr Ile His Ser Thr Ala Arg Leu Ser Gly Ser Leu Lys Asp Val Arg
245 250 255

Ala Glu Leu Thr Ile Asp Gly Gly Asn Ile Arg Leu Ser Gly Lys Ser
260 265 270

Val Ile His Pro Phe Ala Glu Ser Leu Asp Lys Thr Leu Glu Glu Val
275 280 285

Leu Val Lys Gly Phe Asn Ile Asn Pro Ser Ala Phe Val Pro Ser Leu
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Pro Asp Ala Gly Leu Asn Phe Asp Leu Thr Ala Ile Pro Ser Phe Ser
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Asp Gly Ile Ala Leu Glu Gly Ser Leu Asp Leu Glu Asn Thr Lys Ala
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Gly Phe Ala Asp Arg Asn Gly Ile Pro Val Arg Gln Val Leu Gly Gly
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Phe Val Ile Arg Gln Asp Gly Thr Val His Ile Gly Asn Thr Ser Ala
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Ala Leu Leu Gly Arg Gly Gly Ile Arg Leu Ser Gly Lys Ile Asp Thr
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Glu Lys Asp Ile Leu Asp Leu Asn Ile Gly Ile Asn Ser Val Gly Ala
385 390 395 400

Glu Asp Val Leu Gln Thr Ala Phe Lys Gly Arg Leu Asp Gly Ser Ile
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Gly Ile Gly Gly Thr Thr Ala Ser Pro Lys Ile Ser Trp Gln Leu Gly
420 425 430

Thr Gly Thr Ala Arg Thr Asp Gly Ser Leu Pro Ile Ala Ser Asp Pro
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Ala Asn Glu Gln Arg Lys Leu Val Phe Asp Thr Val Asn Ile Ser Ala
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Gly Glu Gly Ser Leu Thr Ala Gln Gly Tyr Leu Glu Leu Phe Lys Asp
465 470 475 480

Arg Leu Leu Lys Leu Asp Ile Arg Ser Arg Ala Phe Asp Pro Ser Arg
485 490 495

Ile Asp Pro Gln Phe Pro Ala Gly Asn Ile Asn Gly Ser Ile His Leu
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Ala Gly Glu Leu Ala Lys Glu Lys Phe Thr Gly Lys Met Arg Phe Leu
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Pro Gly Thr Phe Asn Gly Val Pro Ile Ala Gly Ser Ala Asp Ile Val
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Tyr Glu Ser Arg His Leu Pro Arg Ala Ala Val Asp Leu Arg Leu Gly
545 550 555 560

Arg Asn Ile Val Lys Thr Asp Gly Gly Phe Gly Lys Lys Gly Asp Arg
565 570 575

Leu Asn Leu Asn Ile Thr Ala Pro Asp Leu Ser Arg Phe Gly Phe Gly
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Leu Ala Gly Ser Leu Asn Val Arg Gly His Leu Ser Gly Asp Leu Asp
595 600 605

Gly Gly Ile Arg Thr Phe Glu Thr Asp Leu Ser Gly Thr Ala Arg Asn
610 615 620

Leu His Ile Gly Lys Ala Ala Asp Ile Arg Ser Leu Asp Phe Thr Leu
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Lys Gly Ser Pro Gly Thr Ser Arg Pro Met Arg Ala Asp Ile Lys Gly
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Gly Arg Leu Ser Leu Ser Gly Gly Ala Ala Val Val Asp Thr Ala Gly
660 665 670

Leu Thr Leu Glu Gly Thr Gly Ala Gln His Arg Ile Arg Thr His Ala
675 680 685

Ala Met Thr Leu Asp Gly Lys Pro Phe Lys Leu Asp Leu Asp Ala Ser
690 695 700

Gly Gly Ile Asn Arg Glu Leu Thr Arg Trp Lys Gly Ser Ile Gly Ile
705 710 715 720

Leu Asp Ile Gly Gly Ala Phe Asn Leu Lys Leu Gln Asn Arg Met Thr
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Leu Glu Ala Gly Ala Glu His Val Ala Ala Ser Ala Ala Asn Trp Gln
740 745 750

Ala Met Gly Gly Ser Leu Asn Leu Gln His Phe Ser Trp Asp Arg Lys
755 760 765

Thr Gly Ile Ser Ala Lys Gly Gly Ala Arg Gly Leu His Ile Ala Glu
770 775 780

Leu His Asn Phe Phe Lys Pro Pro Phe Glu His Asn Leu Val Leu Asn
785 790 795 800

Gly Asp Trp Asp Val Ala Tyr Gly His Asn Ala Arg Gly Tyr Leu Asn
805 810 815

Ile Ser Arg Gln Ser Gly Asp Ala Val Leu Pro Gly Gly Gln Ala Leu
820 825 830

Gly Leu Asn Ala Phe Ser Leu Lys Thr Arg Phe Gln Asn Asp Arg Ile
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Gly Ile Leu Leu Asp Gly Gly Ala Arg Phe Gly Arg Ile Asn Ala Asp
850 855 860

Leu Gly Ile Gly Asn Ala Phe Gly Gly Asn Met Ala Asn Thr Pro Leu
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Gly Gly Arg Ile Thr Ala Ser Leu Pro Asp Leu Gly Ala Leu Lys Pro
885 890 895

Phe Leu Pro Ala Ala Ala Gln Asn Ile Thr Gly Ser Leu Asn Ala Ser
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Ala Gln Ile Gly Gly Arg Val Gly Ser Pro Ser Val Asn Ala Ala Val
915 920 925

Asn Gly Ser Ser Asn Tyr Gly Lys Ile Asn Gly Asn Ile Thr Val Gly
930 935 940

Gln Ser Arg Ser Phe Asp Thr Ala Pro Leu Gly Gly Arg Leu Asn Leu
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Thr Val Ala Asp Ala Glu Ala Phe Arg Asn Phe Leu Pro Val Gly Gln
965 970 975

Thr Val Lys Gly Ser Leu Asn Ala Ala Val Thr Leu Gly Gly Ser Ile
980 985 990

Ala Asp Pro His Leu Gly Gly Ser Ile Asn Gly Asp Lys Leu Tyr Tyr
995 1000 1005

Arg Asn Gln Thr Gln Gly Ile Ile Leu Asp Asn Gly Ser Leu Arg Ser
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Arg Pro Asn Arg Arg Leu Thr Val Ser Gly Asn Thr Arg Leu Arg Tyr
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Ser Pro Gln Lys Gly Ile Ser Val Thr Gly Met Ile Lys Thr Asp Gln
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Gln Pro Gly Gly Asn Val Arg Gly Val Gly Thr Val Arg Val Ile Lys
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Gly Arg Tyr Lys Ala Tyr Gly Gln Asp Leu Asp Ile Thr Lys Gly Thr
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Val Ser Phe Val Gly Pro Leu Asn Asp Pro Asn Leu Asn Ile Arg Ala
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Glu Arg Arg Leu Ser Pro Val Gly Ala Gly Val Glu Ile Leu Gly Ser
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Ser Gly Asp Asn Ala Ala Leu Ser Ala Ala Ala Gly Ala Leu Leu Ala
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Gly Gln Ile Asn Asp Arg Ile Gly Leu Val Asp Asp Leu Gly Phe Thr
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Ser Lys Arg Ser Arg Asn Ala Gln Thr Gly Glu Leu Asn Pro Ala Glu
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Gln Val Leu Thr Val Gly Lys Gln Leu Thr Gly Lys Leu Tyr Ile Gly
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Tyr Glu Tyr Gly Ile Ser Ser Ala Glu Gln Ser Val Lys Leu Ile Tyr
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Arg Leu Thr Arg Ala Ile Gln Ala Val Ala Arg Ile Gly Ser Arg Ser
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<211> 1389

<212> PRT

<213> Neisseria meningitidis

<400> 1184

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Ala	Val	Cys	Phe	Leu	Gly	Trp	Leu	Ala	Gly	Thr	Glu	Ala	Gly	Leu	Arg
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Phe	Gly	Leu	Tyr	Gln	Ile	Pro	Ser	Trp	Phe	Gly	Val	Asn	Ile	Ser	Ser
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Gln	Asn	Leu	Lys	Gly	Thr	Leu	Leu	Asp	Gly	Phe	Asp	Gly	Asp	Asn	Trp
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Ile	Ser	Ala	Gly	Asp	Ile	Ala	Ile	Val	Thr	Lys	Pro	Thr	Pro	Pro	Lys
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Ala Phe Asp Lys Gln Thr Val Tyr Leu Glu Arg Leu Asp Ala Ser Tyr
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Arg Tyr Asp Arg Lys Gly His Arg Leu Asp Leu Lys Ala Ala Asp Thr
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Pro Trp Ser Ser Ser Gly Ala Ala Ser Val Gly Leu Lys Lys Pro
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Phe Ala Leu Asp Thr Ala Ile Tyr Thr Lys Gly Gly Leu Glu Gly Lys
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Ala Glu Leu Ala Ile Asp Gly Gly Asn Ile Arg Leu Ser Gly Lys Ser
260 265 270
Val Ile His Pro Phe Ala Glu Ser Leu Asp Lys Thr Leu Glu Glu Val
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Pro Asp Ala Gly Leu Asn Phe Asp Leu Thr Ala Ile Pro Ser Phe Ser
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Asp Gly Ile Ala Leu Glu Gly Ser Leu Asp Leu Glu Asn Thr Lys Ala
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Gly Phe Ala Asp Arg Asn Gly Ile Pro Val Arg Gln Val Leu Gly Gly
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Phe Val Ile Arg Gln Asp Gly Thr Val His Ile Gly Asn Thr Ser Ala
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Ala Leu Leu Gly Arg Gly Ile Arg Leu Ser Gly Lys Ile Asp Thr
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Glu Lys Asp Ile Leu Asp Leu Asn Ile Gly Ile Asn Ser Val Gly Ala
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Gly Gln Gly Ser Leu Thr Ala Gln Gly Tyr Leu Glu Leu Phe Lys Asp
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Ile Asp Pro Gln Leu Pro Ala Gly Asn Ile Asn Gly Ser Ile Asn Leu
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Ala Gly Glu Leu Ala Lys Glu Lys Phe Thr Gly Lys Met Arg Phe Leu
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Pro Gly Thr Phe Asn Gly Val Pro Ile Ala Gly Ser Ala Asp Ile Val
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Tyr Glu Ser Arg His Leu Pro Arg Ala Ala Val Asp Leu Arg Leu Gly
545 550 555 560

Arg Asn Ile Ile Lys Thr Asp Gly Gly Phe Gly Lys Lys Gly Asp Arg
565 570 575

Leu Asn Leu Asn Ile Thr Ala Pro Asp Leu Ser Arg Phe Gly Phe Gly
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Leu Ala Gly Ser Leu Asn Val Arg Gly His Leu Ser Gly Asp Leu Asp
595 600 605

Gly Gly Ile Arg Thr Phe Glu Thr Asp Leu Ser Gly Ala Ala Arg Asn
610 615 620

Leu His Ile Gly Lys Ala Ala Asp Ile Arg Ser Leu Asp Phe Thr Leu
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Lys Gly Ser Pro Asp Thr Ser Arg Pro Ile Arg Ala Asp Ile Lys Gly
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Ser Arg Leu Ser Leu Ser Gly Gly Ala Ala Val Val Asp Thr Ala Asp
660 665 670

Leu Met Leu Asp Gly Thr Gly Val Gln His Arg Ile Arg Thr His Ala
675 680 685

Ala Met Thr Leu Asp Gly Lys Pro Phe Lys Phe Asp Leu Asp Ala Ser
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Gly Gly Ile Asn Arg Glu Leu Thr Arg Trp Lys Gly Ser Ile Gly Ile
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Leu Asp Ile Gly Gly Ala Phe Asn Leu Lys Leu Gln Asn Arg Met Thr
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Leu Glu Ala Gly Ala Glu Arg Val Ala Ala Ser Ala Ala Asn Trp Gln
740 745 750

Ala Met Gly Gly Ser Leu Asn Leu Gln His Phe Ser Trp Asp Lys

755 760 765

Thr Gly Ile Ser Ala Lys Gly Gly Ala His Gly Leu His Ile Ala Glu
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Leu His Asn Phe Phe Lys Pro Pro Phe Glu His Asn Leu Val Leu Asn
785 790 795 800

Gly Asp Trp Asp Val Ala Tyr Gly Arg Asn Ala Arg Gly Tyr Leu Asn
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Ile Ser Arg Gln Ser Gly Asp Ala Val Leu Pro Gly Gly Gln Ala Leu
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Phe Leu Pro Ala Ala Ala Gln Asn Ile Thr Gly Ser Leu Asn Ala Ala
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Ala Gln Ile Gly Gly Arg Val Gly Ser Pro Ser Val Asn Ala Ala Val
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930 935 940

Gln Ser Arg Ser Phe Asp Thr Ala Pro Leu Gly Gly Arg Leu Asn Leu
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Thr Val Lys Gly Ser Leu Asn Ala Ala Val Thr Leu Gly Gly Ser Ile
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Ala Asp Pro His Leu Gly Gly Ser Ile Asn Gly Asp Lys Leu Tyr Tyr
995 1000 1005

Arg Asn Gln Thr Gln Gly Ile Ile Leu Asp Asn Gly Ser Leu Arg Ser
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His Ile Ala Gly Arg Lys Trp Val Ile Asp Ser Leu Lys Phe Arg His
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Pro Asp Val Asp Ile Gly Ala Val Phe Asp Lys Tyr Arg Ile Leu Ser

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Val Asn Met Asn Leu Thr Leu Asp Leu Asn Asp Gly Ile Arg Phe Ala
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Gly Tyr Gly Ala Asp Val Thr Ile Gly Gly Lys Leu Thr Leu Thr Ala
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Gly Arg Tyr Lys Ala Tyr Gly Gln Asp Leu Asp Ile Thr Lys Gly Thr
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Ser Gly Asp Asn Ala Ala Leu Ser Ala Ala Gly Ala Leu Leu Ala
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Gly Gln Ile Asn Asp Arg Ile Gly Leu Val Asp Asp Leu Gly Phe Thr
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Ser Lys Arg Ser Arg Asn Ala Gln Thr Gly Glu Leu Asn Pro Ala Glu
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1370

1375

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<213> Neisseria meningitidis

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<211> 1389

<212> PRT

<213> Neisseria meningitidis

<400> 1186

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Ser	Ile	Glu	Thr	Glu	Gly	Ala	Asp	Leu	Lys	Ile	Ser	Arg	Phe	Arg	Phe
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Ala	Trp	Lys	Pro	Ser	Glu	Leu	Met	Arg	Arg	Ser	Leu	His	Ile	Thr	Glu
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Glu Glu Arg Pro Pro Leu Ser Leu Pro Asp Ser Ile Asp Leu Pro Ala
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Ala Val Tyr Leu Asp Arg Phe Glu Thr Gly Lys Ile Ser Met Gly Lys
165 170 175

Ala Phe Asp Lys Gln Thr Val Tyr Leu Glu Arg Leu Asp Ala Ser Tyr
180 185 190

Arg Tyr Asp Arg Lys Gly His Arg Leu Asp Leu Lys Ala Ala Asp Thr
195 200 205

Pro Trp Ser Ser Ser Gly Ser Ala Ser Val Gly Leu Lys Lys Pro
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Phe Ala Leu Asp Thr Ala Ile Tyr Thr Lys Gly Gly Leu Glu Gly Lys
225 230 235 240

Thr Ile His Ser Thr Ala Arg Leu Ser Gly Ser Leu Lys Asp Val Arg
245 250 255

Ala Glu Leu Ala Ile Asp Gly Gly Asn Ile Arg Leu Ser Gly Lys Ser
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Val Ile His Pro Phe Ala Glu Ser Leu Asp Lys Thr Leu Glu Glu Val
275 280 285

Leu Val Lys Gly Phe Asn Ile Asn Pro Ser Ala Phe Val Pro Ser Leu
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Pro Asp Ala Gly Leu Asn Phe Asp Leu Thr Ala Ile Pro Ser Phe Ser
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Asp Gly Ile Ala Leu Glu Gly Ser Leu Asp Leu Glu Asn Thr Lys Ala
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Phe Val Ile Arg Gln Asp Gly Thr Val His Ile Gly Asn Thr Ser Val
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Ala Leu Leu Gly Arg Gly Ile Arg Leu Ser Gly Lys Ile Asp Thr
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Glu Asp Val Leu Gln Thr Ala Phe Lys Gly Arg Leu Asp Gly Ser Ile
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Gly Ile Gly Gly Thr Thr Ala Ser Pro Lys Ile Ser Trp Gln Leu Gly
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Ile Gly Thr Ala Arg Thr Asp Gly Ser Leu Ala Ile Ala Ser Asp Pro
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Gly Gln Gly Ser Leu Thr Ala Gln Gly Tyr Leu Glu Leu Phe Lys Asp
465 470 475 480

Arg Leu Leu Lys Leu Asp Ile Arg Ser Arg Ala Phe Asp Pro Ser Arg
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Ile Asp Pro Gln Leu Pro Ala Gly Asn Ile Asn Gly Ser Ile Asn Leu
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Ala Gly Glu Leu Ala Lys Glu Lys Phe Thr Gly Lys Met Arg Phe Leu
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Tyr Glu Ser Arg His Leu Pro Arg Ala Ala Val Asp Leu Arg Leu Gly
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Arg Asn Ile Ile Lys Thr Asp Gly Gly Phe Gly Lys Lys Gly Asp Arg
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Leu Ala Gly Ser Leu Asn Val Arg Gly His Leu Ser Gly Asp Leu Asp
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Gly Gly Ile Arg Thr Phe Glu Thr Asp Leu Ser Gly Ala Ala Arg Asn
610 615 620

Leu His Ile Gly Lys Ala Ala Asp Ile Arg Ser Leu Asp Phe Thr Leu
625 630 635 640

Lys Gly Ser Pro Asp Thr Ser Arg Pro Ile Arg Ala Asp Ile Lys Gly
645 650 655

Ser Arg Leu Ser Leu Ser Gly Gly Ala Glu Val Val Asp Thr Ala Asp
660 665 670

Leu Met Leu Asp Gly Thr Gly Val Gln His Arg Ile Arg Thr His Ala
675 680 685

Ala Met Thr Leu Asp Gly Lys Pro Phe Lys Phe Asp Leu Asp Ala Ser
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Gly Gly Ile Asn Arg Glu Leu Thr Arg Trp Lys Gly Ser Ile Gly Ile
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Leu Glu Ala Gly Ala Glu Arg Val Ala Ala Ser Ala Ala Asn Trp Gln
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Ala Met Gly Gly Ser Leu Asn Leu Gln His Phe Ser Trp Asp Lys Lys
755 760 765

Thr Gly Ile Ser Ala Lys Gly Gly Ala His Gly Leu His Ile Ala Glu
770 775 780

Leu His Asn Phe Phe Lys Pro Pro Phe Glu His Asn Leu Val Leu Asn
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Gly Leu Asn Ala Phe Ser Leu Lys Thr Arg Phe Gln Asn Asp Arg Ile
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Gly Ile Leu Leu Asp Gly Gly Ala Arg Phe Gly Arg Ile Asn Ala Asp
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Gly Gly Arg Ile Thr Ala Ser Leu Pro Asp Leu Gly Thr Leu Lys Pro
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Phe Leu Pro Ala Ala Ala Gln Asn Ile Thr Gly Ser Leu Asn Ala Ala
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Asn Gly Ser Ser Asn Tyr Gly Lys Ile Asn Gly Asn Ile Thr Val Gly
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Thr Val Lys Gly Ser Leu Asn Ala Ala Val Thr Leu Gly Gly Ser Ile
980 985 990

Ala Asp Pro His Leu Gly Gly Ser Ile Asn Gly Asp Lys Leu Tyr Tyr
995 1000 1005

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Pro Asp Val Asp Ile Gly Ala Val Phe Asp Lys Tyr Arg Ile Leu Ser
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<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1188

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Tyr Gln Ile Pro Ser Trp Phe Gly Val Asn Ile Ser Ser Gln Asn Leu
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Lys Gly Thr Leu Leu Asp Gly Phe Asp Gly Asp Asn Trp Ser Ile Glu
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Thr Glu Gly Ala Asp Leu Lys Ile Ser Arg Phe Arg Phe Ala Trp Lys
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Pro Ser Glu Leu Met Arg Arg Ser Leu His Ile Thr Asp Ile Ser Ala
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Leu Ala Lys Glu Lys Phe Thr Gly Lys Met Arg Phe Leu Pro Gly Thr
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Phe Asn Gly Val Pro Ile Ala Gly Ser Ala Asp Ile Val Tyr Glu Ser
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Arg His Leu Pro Arg Ala Ala Val Asp Leu Arg Leu Gly Arg Asn Ile
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Val Lys Thr Asp Gly Gly Phe Gly Lys Lys Gly Asp Arg Leu Asn Leu
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Asn Ile Thr Ala Pro Asp Leu Ser Arg Phe Gly Phe Gly Leu Ala Gly
545 550 555 560

Ser Leu Asn Val Arg Gly His Leu Ser Gly Asp Leu Asp Gly Gly Ile
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Arg Thr Phe Glu Thr Asp Leu Ser Gly Thr Ala Arg Asn Leu His Ile
580 585 590

Gly Lys Ala Ala Asp Ile Arg Ser Leu Asp Phe Thr Leu Lys Gly Ser
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Pro Gly Thr Ser Arg Pro Met Arg Ala Asp Ile Lys Gly Gly Arg Leu
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Ser Leu Ser Gly Gly Ala Ala Val Val Asp Thr Ala Gly Leu Thr Leu
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Glu Gly Thr Gly Ala Gln His Arg Ile Arg Thr His Ala Ala Met Thr
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Leu Asp Gly Lys Pro Phe Lys Leu Asp Leu Asp Ala Ser Gly Gly Ile
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Asn Arg Glu Leu Thr Arg Trp Lys Gly Ser Ile Gly Ile Leu Asp Ile
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Gly Gly Ala Phe Asn Leu Lys Leu Gln Asn Arg Met Thr Leu Glu Ala
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Gly Ala Glu His Val Ala Ala Ser Ala Ala Asn Trp Gln Ala Met Gly

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His Leu Gly Gly Ser Ile Asn Gly Asp Lys Leu Tyr Tyr Arg Asn Gln
965 970 975
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Gly Arg Lys Trp Val Ile Asp Ser Leu Lys Phe Arg His Glu Gly Thr
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<210> 1189

<211> 4065

<212> DNA

<213> Neisseria meningitidis

<400> 1189

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<211> 1354

<212> PRT

<213> Neisseria meningitidis

<400> 1190

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20								25							

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Lys	Gly	Thr	Leu	Leu	Asp	Gly	Phe	Asp	Gly	Asp	Asn	Trp	Ser	Ile	Glu
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Thr	Glu	Gly	Ala	Asp	Leu	Lys	Ile	Ser	Arg	Phe	Arg	Phe	Ala	Trp	Lys
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65								70						75	

Pro	Ser	Glu	Leu	Met	Arg	Arg	Ser	Leu	His	Ile	Thr	Glu	Ile	Ser	Ala
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85								90							

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100								105							

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Lys Gln Thr Val Tyr Leu Glu Arg Leu Asp Ala Ser Tyr Arg Tyr Asp
145 150 155 160
Arg Lys Gly His Arg Leu Asp Leu Lys Ala Ala Asp Thr Pro Trp Ser
165 170 175
Ser Ser Ser Gly Ala Ala Ser Val Gly Leu Lys Pro Phe Ala Leu
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Asp Thr Ala Ile Tyr Thr Lys Gly Gly Leu Glu Gly Lys Thr Ile His
195 200 205
Ser Thr Ala Arg Leu Ser Gly Ser Leu Lys Asp Val Arg Ala Glu Leu
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Ala Ile Asp Gly Gly Asn Ile Arg Leu Ser Gly Lys Ser Val Ile His
225 230 235 240
Pro Phe Ala Glu Ser Leu Asp Lys Thr Leu Glu Glu Val Leu Val Lys
245 250 255
Gly Phe Asn Ile Asn Pro Ala Ala Phe Val Pro Ser Leu Pro Asp Ala
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Gly Leu Asn Phe Asp Leu Thr Ala Ile Pro Ser Phe Ser Asp Gly Ile
275 280 285
Ala Leu Glu Gly Ser Leu Asp Leu Glu Asn Thr Lys Ala Gly Phe Ala
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Arg Gln Asp Gly Thr Val His Ile Gly Asn Thr Ser Ala Ala Leu Leu
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Leu Gln Thr Ala Phe Lys Gly Arg Leu Asp Gly Ser Ile Gly Ile Gly
370 375 380
Gly Thr Thr Ala Ser Pro Lys Ile Ser Trp Gln Leu Gly Ile Gly Thr
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Ala Arg Thr Asp Gly Ser Leu Ala Ile Ala Ser Asp Pro Ala Asn Gly
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Gln Arg Lys Leu Val Leu Asp Thr Val Asn Ile Ala Ala Gly Gln Gly

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Ser Leu Thr Ala Gln Gly Tyr Leu Glu Leu Phe Lys Asp Arg Leu Leu
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Lys Leu Asp Ile Arg Ser Arg Ala Phe Asp Pro Ser Arg Ile Asp Pro
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Gln Leu Pro Ala Gly Asn Ile Asn Gly Ser Ile Asn Leu Ala Gly Glu
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Leu Ala Lys Glu Lys Phe Thr Gly Lys Met Arg Phe Leu Pro Gly Thr
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Phe Asn Gly Val Pro Ile Ala Gly Ser Ala Asp Ile Val Tyr Glu Ser
500 505 510

Arg His Leu Pro Arg Ala Ala Val Asp Leu Arg Leu Gly Arg Asn Ile
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Ile Lys Thr Asp Gly Gly Phe Gly Lys Gly Asp Arg Leu Asn Leu
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Ser Leu Asn Val Arg Gly His Leu Ser Gly Asp Leu Asp Gly Gly Ile
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Arg Thr Phe Glu Thr Asp Leu Ser Gly Ala Ala Arg Asn Leu His Ile
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Gly Lys Ala Ala Asp Ile Arg Ser Leu Asp Phe Thr Leu Lys Gly Ser
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Pro Asp Thr Ser Arg Pro Ile Arg Ala Asp Ile Lys Gly Ser Arg Leu
610 615 620

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Asp Gly Thr Gly Val Gln His Arg Ile Arg Thr His Ala Ala Met Thr
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Leu Asp Gly Lys Pro Phe Lys Phe Asp Leu Asp Ala Ser Gly Gly Ile
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Asn Arg Glu Leu Thr Arg Trp Lys Gly Ser Ile Gly Ile Leu Asp Ile
675 680 685

Gly Gly Ala Phe Asn Leu Lys Leu Gln Asn Arg Met Thr Leu Glu Ala
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Gly Ala Glu Arg Val Ala Ala Ser Ala Ala Asn Trp Gln Ala Met Gly
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Gly Ser Leu Asn Leu Gln His Phe Ser Trp Asp Lys Lys Thr Gly Ile

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<212> DNA

<213> Neisseria meningitidis

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gcccgtttcg ggcggattaa cggcgttgc gacatcgca acgccttcgg cggcaatatg 2520
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<210> 1192

<211> 1354

<212> PRT

<213> *Neisseria meningitidis*

<400> 1192

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Phe Leu Gly Trp Leu Ala Gly Thr Glu Ala Gly Leu Arg Phe Gly Leu
 20 25 30

Tyr Gln Ile Pro Ser Trp Phe Gly Val Asn Ile Ser Ser Gln Asn Leu
 35 40 45

Lys Gly Thr Leu Leu Asp Gly Phe Asp Gly Asp Asn Trp Ser Ile Glu
 50 55 60

Thr Glu Gly Ala Asp Leu Lys Ile Ser Arg Phe Arg Phe Ala Trp Lys
65 70 75 80

Pro Ser Glu Leu Met Arg Arg Ser Leu His Ile Thr Glu Ile Ser Ala
85 90 95

Gly Asp Ile Ala Ile Val Thr Lys Pro Thr Pro Pro Lys Glu Glu Arg
100 105 110

Pro Pro Leu Ser Leu Pro Asp Ser Ile Asp Leu Pro Ala Ala Val Tyr
115 120 125

Lys Gln Thr Val Tyr Leu Glu Arg Leu Asp Ala Ser Tyr Arg Tyr Asp
145 150 155 160

Arg Lys Gly His Arg Leu Asp Leu Lys Ala Ala Asp Thr Pro Trp Ser
165 170 175

Ser Ser Ser Gly Ser Ala Ser Val Gly Leu Lys Lys Pro Phe Ala Leu
180 185 190

Asp Thr Ala Ile Tyr Thr Lys Gly Gly Leu Glu Gly Lys Thr Ile His
195 200 205

Ser Thr Ala Arg Leu Ser Gly Ser Leu Lys Asp Val Arg Ala Glu Leu
210 215 220

Ala Ile Asp Gly Gly Asn Ile Arg Leu Ser Gly Lys Ser Val Ile His
225 230 235 240

Pro Phe Ala Glu Ser Leu Asp Lys Thr Leu Glu Glu Val Leu Val Lys
245 250 255

Gly Phe Asn Ile Asn Pro Ser Ala Phe Val Pro Ser Leu Pro Asp Ala
260 265 270

Gly Leu Asn Phe Asp Leu Thr Ala Ile Pro Ser Phe Ser Asp Gly Ile
275 280 285

Ala Leu Glu Gly Ser Leu Asp Leu Glu Asn Thr Lys Ala Gly Phe Ala
290 295 300

Asp Arg Asn Gly Ile Pro Val Arg Gln Val Leu Gly Ser Phe Val Ile
305 310 315 320

Arg Gln Asp Gly Thr Val His Ile Gly Asn Thr Ser Val Ala Leu Leu
325 330 335

Gly Arg Gly Gly Ile Arg Leu Ser Gly Lys Ile Asp Thr Glu Lys Asp
340 345 350

Ile Leu Asp Leu Asn Ile Gly Ile Asn Ser Val Gly Ala Glu Asp Val
355 360 365

Leu Gln Thr Ala Phe Lys Gly Arg Leu Asp Gly Ser Ile Gly Ile Gly
370 375 380

Gly Thr Thr Ala Ser Pro Lys Ile Ser Trp Gln Leu Gly Ile Gly Thr
385 390 395 400

Ala Arg Thr Asp Gly Ser Leu Ala Ile Ala Ser Asp Pro Ala Asn Gly
405 410 415

Gln Arg Lys Leu Val Leu Asp Thr Val Asn Ile Ala Ala Gly Gln Gly
420 425 430

Ser Leu Thr Ala Gln Gly Tyr Leu Glu Leu Phe Lys Asp Arg Leu Leu
435 440 445

Lys Leu Asp Ile Arg Ser Arg Ala Phe Asp Pro Ser Arg Ile Asp Pro
450 455 460

Gln Leu Pro Ala Gly Asn Ile Asn Gly Ser Ile Asn Leu Ala Gly Glu
465 470 475 480

Leu Ala Lys Glu Lys Phe Thr Gly Lys Met Arg Phe Leu Pro Gly Thr
485 490 495

Phe Asn Gly Val Pro Ile Ala Gly Ser Ala Asp Ile Val Tyr Glu Ser
500 505 510

Arg His Leu Pro Arg Ala Ala Val Asp Leu Arg Leu Gly Arg Asn Ile
515 520 525

Ile Lys Thr Asp Gly Gly Phe Gly Lys Lys Gly Asp Arg Leu Asn Leu
530 535 540

Asn Ile Thr Ala Pro Asp Leu Ser Arg Phe Gly Phe Gly Leu Ala Gly
545 550 555 560

Ser Leu Asn Val Arg Gly His Leu Ser Gly Asp Leu Asp Gly Gly Ile
565 570 575

Arg Thr Phe Glu Thr Asp Leu Ser Gly Ala Ala Arg Asn Leu His Ile
580 585 590

Gly Lys Ala Ala Asp Ile Arg Ser Leu Asp Phe Thr Leu Lys Gly Ser
595 600 605

Pro Asp Thr Ser Arg Pro Ile Arg Ala Asp Ile Lys Gly Ser Arg Leu
610 615 620

Ser Leu Ser Gly Gly Ala Glu Val Val Asp Thr Ala Asp Leu Met Leu
625 630 635 640

Asp Gly Thr Gly Val Gln His Arg Ile Arg Thr His Ala Ala Met Thr
645 650 655

Leu Asp Gly Lys Pro Phe Lys Phe Asp Leu Asp Ala Ser Gly Gly Ile
660 665 670

Asn Arg Glu Leu Thr Arg Trp Lys Gly Ser Ile Gly Ile Leu Asp Ile
675 680 685

Gly Gly Ala Phe Asn Leu Lys Leu Gln Asn Arg Met Thr Leu Glu Ala
690 695 700

Gly Ala Glu Arg Val Ala Ala Ser Ala Ala Asn Trp Gln Ala Met Gly
705 710 715 720

Gly Ser Leu Asn Leu Gln His Phe Ser Trp Asp Lys Lys Thr Gly Ile
725 730 735

Ser Ala Lys Gly Gly Ala His Gly Leu His Ile Ala Glu Leu His Asn

740 745 750

Phe Phe Lys Pro Pro Phe Glu His Asn Leu Val Leu Asn Gly Asp Trp
755 760 765

Asp Val Ala Tyr Gly Arg Asn Ala Arg Gly Tyr Leu Asn Ile Ser Arg
770 775 780

Gln Ser Gly Asp Ala Val Leu Pro Gly Gly Gln Ala Leu Gly Leu Asn
785 790 800

Ala Phe Ser Leu Lys Thr Arg Phe Gln Asn Asp Arg Ile Gly Ile Leu
805 810 815

Leu Asp Gly Gly Ala Arg Phe Gly Arg Ile Asn Ala Asp Leu Asp Ile
820 825 830

Gly Asn Ala Phe Gly Gly Asn Met Ala Asn Ala Pro Leu Gly Gly Arg
835 840 845

Ile Thr Ala Ser Leu Pro Asp Leu Gly Thr Leu Lys Pro Phe Leu Pro
850 855 860

Ala Ala Ala Gln Asn Ile Thr Gly Ser Leu Asn Ala Ala Gln Ile
865 870 880

Gly Gly Arg Val Gly Ser Pro Ser Val Asn Ala Ala Val Asn Gly Ser
885 890 895

Ser Asn Tyr Gly Lys Ile Asn Gly Asn Ile Thr Val Gly Gln Ser Arg
900 905 910

Ser Phe Asp Thr Ala Pro Leu Gly Gly Arg Leu Asn Leu Thr Val Ala
915 920 925

Asp Ala Glu Val Phe Arg Asn Phe Leu Pro Val Gly Gln Thr Val Lys
930 935 940

Gly Ser Leu Asn Ala Ala Val Thr Leu Gly Gly Ser Ile Ala Asp Pro
945 950 960

His Leu Gly Gly Ser Ile Asn Gly Asp Lys Leu Tyr Tyr Arg Asn Gln
965 970 975

Thr Gln Gly Ile Ile Leu Asp Asn Gly Ser Leu Arg Ser His Ile Ala
980 985 990

Gly Arg Lys Trp Val Ile Asp Ser Leu Lys Phe Arg His Glu Gly Thr
995 1000 1005

Ala Glu Leu Ser Gly Thr Val Gly Met Glu Asn Ser Gly Pro Asp Val
1010 1015 1020

Asp Ile Gly Ala Val Phe Asp Lys Tyr Arg Ile Leu Ser Arg Pro Asn
1025 1030 1035 1040

Arg Arg Leu Thr Val Ser Gly Asn Thr Arg Leu Arg Tyr Ser Pro Gln
1045 1050 1055

Lys Gly Ile Ser Val Thr Gly Met Ile Lys Thr Asp Gln Gly Leu Phe
1060 1065 1070

Gly Ser Gln Lys Ser Ser Met Pro Ser Val Gly Asp Asp Val Val Val
1075 1080 1085

Leu Gly Glu Val Lys Lys Glu Ala Ala Ala Pro Leu Pro Val Asn Met
1090 1095 1100

Asn Leu Thr Leu Asp Leu Asn Asp Gly Ile Arg Phe Ala Gly Tyr Gly
1105 1110 1115 1120

Ala Asp Val Thr Ile Gly Gly Lys Leu Thr Leu Thr Ala Gln Ser Gly
1125 1130 1135

Gly Ser Val Arg Gly Val Gly Thr Val Arg Val Ile Lys Gly Arg Tyr
1140 1145 1150

Lys Ala Tyr Gly Gln Asp Leu Asp Ile Thr Lys Gly Thr Val Ser Phe
1155 1160 1165

Val Gly Pro Leu Asn Asp Pro Asn Leu Asn Ile Arg Ala Glu Arg Arg
1170 1175 1180

Leu Ser Pro Val Gly Ala Gly Val Glu Ile Leu Gly Ser Leu Asn Ser
1185 1190 1195 1200

Pro Arg Ile Thr Leu Thr Ala Asn Glu Pro Met Ser Glu Lys Asp Lys
1205 1210 1215

Leu Ser Trp Leu Ile Leu Asn Arg Ala Gly Ser Gly Ser Ser Gly Asp
1220 1225 1230

Asn Ala Ala Leu Ser Ala Ala Gly Ala Leu Leu Ala Gly Gln Ile
1235 1240 1245

Asn Asp Arg Ile Gly Leu Val Asp Asp Leu Gly Phe Thr Ser Lys Arg
1250 1255 1260

Ser Arg Asn Ala Gln Thr Gly Glu Leu Asn Pro Ala Glu Gln Val Leu
1265 1270 1275 1280

Thr Val Gly Lys Gln Leu Thr Gly Lys Leu Tyr Ile Gly Tyr Glu Tyr
1285 1290 1295

Ser Ile Ser Ser Ala Glu Gln Ser Val Lys Leu Ile Tyr Arg Leu Thr
1300 1305 1310

Arg Ala Ile Gln Ala Val Ala Arg Ile Gly Ser Arg Ser Ser Gly Gly
1315 1320 1325

Glu Leu Thr Tyr Thr Ile Arg Phe Asp Arg Phe Ser Gly Ser Asp Lys
1330 1335 1340

Lys Asp Ser Ala Gly Asn Ser Lys Gly Lys
1345 1350

<210> 1193
<211> 1569
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1193
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gcattgttca aaagcaaaaag ccccgacacc gaatcagtca aattaaaaacc caaattcccc 180
gtccgcacatcg acacgcagga cagtgaatc aaagatatgg tcgaagaaca cctgcccgtc 240
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tggggaaaaca gcaaaaacttc cgtcctcgcc gcggtaaacgc gcaaaggcta cccgcttgc 600
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cgaacttga 1569

<210> 1194
<211> 522
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1194
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Pro Ala Leu Phe Phe Pro His Ala Tyr Ala Pro Ala Ala Asp Leu
20 25 30

Ser Glu Asn Lys Ala Ala Gly Phe Ala Leu Phe Lys Ser Lys Ser Pro
35 40 45

Asp Thr Glu Ser Val Lys Leu Lys Pro Lys Phe Pro Val Arg Ile Asp
50 55 60

Thr Gln Asp Ser Glu Ile Lys Asp Met Val Glu Glu His Leu Pro Leu
65 70 75 80

Ile Thr Gln Gln Gln Glu Glu Val Leu Asp Lys Glu Gln Thr Gly Phe
85 90 95

Leu Ala Glu Glu Ala Pro Asp Asn Val Lys Thr Met Leu Arg Ser Lys
100 105 110

Gly Tyr Phe Ser Ser Lys Val Ser Leu Thr Glu Lys Asp Gly Ala Tyr
115 120 125

Thr Val His Ile Thr Pro Gly Pro Arg Thr Lys Ile Ala Asn Val Gly
130 135 140

Val Ala Ile Leu Gly Asp Ile Leu Ser Asp Gly Asn Leu Ala Glu Tyr
145 150 155 160

Tyr Arg Asn Ala Leu Glu Asn Trp Gln Gln Pro Val Gly Ser Asp Phe
165 170 175

Asp Gln Asp Ser Trp Glu Asn Ser Lys Thr Ser Val Leu Gly Ala Val
180 185 190

Thr Arg Lys Gly Tyr Pro Leu Ala Lys Leu Gly Asn Thr Arg Ala Ala
195 200 205

Val Asn Pro Asp Thr Ala Thr Ala Asp Leu Asn Val Val Val Asp Ser
210 215 220

Gly Arg Pro Ile Ala Phe Gly Asp Phe Glu Ile Thr Gly Thr Gln Arg
225 230 235 240

Tyr Pro Glu Gln Thr Val Ser Gly Leu Ala Arg Phe Gln Pro Gly Thr
245 250 255

Pro Tyr Asp Leu Asp Leu Leu Asp Phe Gln Gln Ala Leu Glu Gln
260 265 270

Asn Gly His Tyr Ser Gly Ala Ser Val Gln Ala Asp Phe Asp Arg Leu
275 280 285

Pro Arg Gly Pro Arg Pro Arg Gln Ser Gln Arg Asn Arg Gly Gln Thr
290 295 300

Pro Gln Thr Arg Asn Arg His Pro Pro Arg Phe Gly Ile Arg Phe Gly
305 310 315 320

Arg Gln Asn Arg Leu Arg Leu Leu Gln Pro Leu Gln Gln Arg Leu Tyr
325 330 335

Arg Leu Gly Arg Leu Gly Tyr Gly Gln Ile Arg Asn His Ala Cys Arg
340 345 350

Arg His Gln Pro Ala Ala Gln Leu Ser Gly Gln Leu Leu Asp Lys Gln
355 360 365

Arg Phe Leu Gln Pro Phe Asp His Pro Lys Pro Arg Lys Thr Arg Leu
370 375 380

Leu Arg Arg His Leu Val Cys Ala Arg Pro Arg Gly His Arg Cys Gln
385 390 395 400

Ala Gly Gly Gly Ile Ser Arg Arg Arg Pro Glu Asn Pro Arg Leu Gly
405 410 415

Cys Arg Phe Gly Gln Gln Pro Arg His Asp Ala Asp Arg Leu Leu Glu
420 425 430

Thr Pro Ala Ala Gln Gln Arg Ala Ala Pro Arg Lys Arg Pro Leu Pro
435 440 445

Arg Arg Gln Asn Arg Asp Asp Phe Gly His Ile Pro Val Leu His Arg
450 455 460

Ala Asn Pro His Leu Cys Pro Arg Arg Leu Phe Leu His Ala Arg Lys
465 470 475 480

Gln Lys Thr Arg His Val His His Thr Arg Thr Ser Gly Leu His Arg
485 490 495

Cys Thr Arg Gln Cys Arg Cys Pro Leu Gly Ala Asp Val Pro Gln Arg
500 505 510

Arg Arg Val Phe Arg Ala Arg Leu Arg Thr
515 520

<210> 1195

<211> 1848

<212> DNA

<213> Neisseria meningitidis

<400> 1195

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gcatttgtca aaaacaaaag ccccgacacc gaatcaagtca attaaaaacc caaatcccc 180
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<210> 1196

<211> 615

<212> PRT

<213> Neisseria meningitidis

<400> 1196

Met His Asp Thr Arg Thr Met Met Ile Lys Pro Thr Ala Leu Leu Leu
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Pro Ala Leu Phe Phe Phe Pro His Ala Tyr Ala Pro Ala Ala Asp Leu
20 25 30

Ser Glu Asn Lys Ala Ala Gly Phe Ala Leu Phe Lys Asn Lys Ser Pro
35 40 45

Asp Thr Glu Ser Val Lys Leu Lys Pro Lys Phe Pro Val Leu Ile Asp
50 55 60

Thr Gln Asp Ser Glu Ile Lys Asp Met Val Glu Glu His Leu Pro Leu
65 70 75 80

Ile Thr Gln Gln Gln Glu Glu Val Leu Asp Lys Glu Gln Thr Gly Phe
85 90 95

Leu Ala Glu Glu Ala Pro Asp Asn Val Lys Thr Met Leu Arg Ser Lys
100 105 110

Gly Tyr Phe Ser Ser Lys Val Ser Leu Thr Glu Lys Asp Gly Ala Tyr
115 120 125

Thr Val His Ile Thr Pro Gly Pro Arg Thr Lys Ile Ala Asn Val Gly
130 135 140

Val Ala Ile Leu Gly Asp Ile Leu Ser Asp Gly Asn Leu Ala Glu Tyr
145 150 155 160

Tyr Arg Asn Ala Leu Glu Asn Trp Gln Gln Pro Val Gly Ser Asp Phe
165 170 175

Asp Gln Asp Ser Trp Glu Asn Ser Lys Thr Ser Val Leu Gly Ala Val
180 185 190

Thr Arg Lys Ala Tyr Pro Leu Ala Lys Leu Gly Asn Thr Gln Ala Ala
195 200 205

Val Asn Pro Asp Thr Ala Thr Ala Asp Leu Asn Val Val Val Asp Ser
210 215 220

Gly Arg Pro Ile Ala Phe Gly Asp Phe Glu Ile Thr Gly Thr Gln Arg
225 230 235 240

Tyr Pro Glu Gln Ile Val Ser Gly Leu Ala Arg Phe Gln Pro Gly Met
245 250 255

Pro Tyr Asp Leu Asp Leu Leu Asp Phe Gln Gln Ala Leu Glu Gln
260 265 270

Asn Gly His Tyr Ser Gly Ala Ser Val Gln Ala Asp Phe Asp Arg Leu
275 280 285

Gln Gly Asp Arg Val Pro Val Lys Val Ser Val Thr Glu Val Lys Arg
290 295 300

His Lys Leu Glu Thr Gly Ile Arg Leu Asp Ser Glu Tyr Gly Leu Gly
305 310 315 320

Gly Lys Ile Ala Tyr Asp Tyr Tyr Asn Leu Phe Asn Lys Gly Tyr Ile
325 330 335

Gly Ser Val Val Trp Asp Met Asp Lys Tyr Glu Thr Thr Leu Ala Ala
340 345 350

Gly Ile Ser Gln Pro Arg Asn Tyr Arg Gly Asn Tyr Trp Thr Ser Asn
355 360 365

Val Ser Tyr Asn Arg Ser Thr Thr Gln Asn Leu Glu Lys Arg Ala Phe
370 375 380

Ser Gly Gly Val Trp Tyr Val Arg Asp Arg Ala Gly Ile Asp Ala Arg
385 390 395 400

Leu Gly Ala Glu Phe Leu Ala Glu Gly Arg Lys Ile Pro Gly Ser Ala
405 410 415

Val Asp Leu Gly Asn Ser His Ala Thr Met Leu Thr Ala Ser Trp Lys
420 425 430

Arg Gln Leu Leu Asn Asn Val Leu His Pro Glu Asn Gly His Tyr Leu
435 440 445

Asp Gly Lys Ile Gly Thr Thr Leu Gly Thr Phe Leu Ser Ser Thr Ala
450 455 460

Leu Ile Arg Thr Ser Ala Arg Ala Gly Tyr Phe Phe Thr Pro Glu Asn
465 470 475 480

Lys Lys Leu Gly Thr Phe Ile Ile Arg Gly Gln Ala Gly Tyr Thr Val
485 490 495

Ala Arg Asp Asn Ala Asp Val Pro Ser Gly Leu Met Phe Arg Ser Gly

500 505 510
Gly Ala Ser Ser Val Arg Gly Tyr Glu Leu Asp Ser Ile Gly Leu Ala
515 520 525

Gly Pro Asn Gly Ser Val Leu Pro Glu Arg Ala Leu Leu Val Gly Ser
530 535 540

Leu Glu Tyr Gln Leu Pro Phe Thr Arg Thr Leu Ser Gly Ala Val Phe
545 550 555 560

His Asp Met Gly Asp Ala Ala Ala Asn Phe Lys Arg Met Lys Leu Lys
565 570 575

His Gly Ser Gly Leu Gly Val Arg Trp Phe Ser Pro Leu Ala Pro Phe
580 585 590

Ser Phe Asp Ile Ala Tyr Gly His Ser Asp Lys Lys Ile Arg Trp His
595 600 605

Ile Ser Leu Gly Thr Arg Phe
610 615

<210> 1197

<211> 1848

<212> DNA

<213> Neisseria meningitidis

<400> 1197

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ttgggtggca gccttgaata ccaactgccc tttacgcgc ccctttccgg cgcggtgttc 1680
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ctgggcgtgc gctggttcag cccgctcgcc cggtttct tcgacatcgcc tacgggcac 1800
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<210> 1198

<211> 615

<212> PRT

<213> Neisseria meningitidis

<400> 1198

Met His Asp Thr Arg Thr Met Met Ile Lys Pro Thr Ala Leu Leu Leu
1 5 10 15

Pro Ala Leu Phe Phe Pro His Ala Tyr Ala Pro Ala Ala Asp Leu
20 25 30

Ser Glu Asn Lys Ala Ala Gly Phe Ala Leu Phe Lys Asn Lys Ser Pro
35 40 45

Asp Thr Glu Ser Val Lys Leu Lys Pro Lys Phe Pro Val Arg Ile Asp
50 55 60

Thr Gln Asp Ser Glu Ile Lys Asp Met Val Glu Glu His Leu Pro Leu
65 70 75 80

Ile Thr Gln Gln Gln Glu Glu Val Leu Asp Lys Glu Gln Thr Gly Phe
85 90 95

Leu Ala Glu Glu Ala Pro Asp Asn Val Lys Thr Met Leu Arg Ser Lys
100 105 110

Gly Tyr Phe Ser Ser Lys Val Ser Leu Thr Glu Lys Asp Gly Ala Tyr
115 120 125

Thr Val His Ile Thr Pro Gly Pro Arg Thr Lys Ile Ala Asn Val Gly
130 135 140

Val Ala Ile Leu Gly Asp Ile Leu Ser Asp Gly Asn Leu Ala Glu Tyr
145 150 155 160

Tyr Arg Asn Ala Leu Glu Asn Trp Gln Gln Pro Val Gly Ser Asp Phe
165 170 175

Asp Gln Asp Ser Trp Glu Asn Ser Lys Thr Ser Val Leu Gly Ala Val
180 185 190

Thr Arg Lys Ala Tyr Pro Leu Ala Lys Leu Gly Asn Thr Arg Ala Ala
195 200 205

Val Asn Pro Asp Thr Ala Thr Ala Asp Leu Asn Val Val Val Asp Ser
210 215 220

Gly Arg Pro Ile Ala Phe Gly Asp Phe Glu Ile Thr Gly Thr Gln Arg
225 230 235 240

Tyr Pro Glu Gln Ile Val Ser Gly Leu Ala Arg Phe Gln Pro Gly Thr
245 250 255

Pro Tyr Asp Leu Asp Leu Leu Asp Phe Gln Gln Ala Leu Glu Gln
260 265 270

Asn Gly His Tyr Ser Gly Ala Ser Val Gln Ala Asp Phe Asp Arg Leu
275 280 285

Gln Gly Asp Arg Val Pro Val Lys Val Ser Val Thr Glu Val Lys Arg
290 295 300

His Lys Leu Glu Thr Gly Ile Arg Leu Asp Ser Glu Tyr Gly Leu Gly
305 310 315 320

Gly Lys Ile Ala Tyr Asp Tyr Tyr Asn Leu Phe Asn Lys Gly Tyr Ile
325 330 335

Gly Ser Val Val Trp Asp Met Asp Lys Tyr Glu Thr Thr Leu Ala Ala
340 345 350

Gly Ile Ser Gln Pro Arg Asn Tyr Arg Gly Asn Tyr Trp Thr Ser Asn
355 360 365

Val Ser Tyr Asn Arg Ser Thr Thr Gln Asn Leu Glu Lys Arg Ala Phe
370 375 380

Ser Gly Gly Ile Trp Tyr Val Arg Asp Arg Ala Gly Ile Asp Ala Arg
385 390 395 400

Leu Gly Ala Glu Phe Leu Ala Glu Gly Arg Lys Ile Pro Gly Ser Asp
405 410 415

Ile Asp Leu Gly Asn Ser His Ala Thr Met Leu Thr Ala Ser Trp Lys
420 425 430

Arg Gln Leu Leu Asn Asn Val Leu His Pro Glu Asn Gly His Tyr Leu
435 440 445

Asp Gly Lys Ile Gly Thr Thr Leu Gly Ala Phe Leu Ser Ser Thr Ala
450 455 460

Leu Ile Arg Thr Ser Ala Arg Ala Gly Tyr Phe Phe Thr Pro Glu Asn
465 470 475 480

Lys Lys Leu Gly Thr Phe Ile Ile Arg Gly Gln Ala Gly Tyr Thr Val
485 490 495

Ala Arg Asp Asn Ala Asn Val Pro Ser Gly Leu Met Phe Arg Ser Gly
500 505 510

Gly Ala Ser Ser Val Arg Gly Tyr Glu Leu Asp Ser Ile Gly Leu Ala
515 520 525

Gly Pro Asn Gly Ser Val Leu Pro Glu Arg Ala Leu Leu Val Gly Ser
530 535 540

Leu Glu Tyr Gln Leu Pro Phe Thr Arg Thr Leu Ser Gly Ala Val Phe
545 550 555 560

His Asp Met Gly Asp Ala Ala Ala Asn Phe Lys Arg Met Lys Leu Lys
565 570 575

His Gly Ser Gly Leu Gly Val Arg Trp Phe Ser Pro Leu Ala Pro Phe
580 585 590

Ser Phe Asp Ile Ala Tyr Gly His Ser Asp Lys Lys Ile Arg Trp His
595 600 605

Ile Ser Leu Gly Thr Arg Phe
610 615

<210> 1199

<211> 1290

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1199

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gttgttgcg aaaatgcggg ggaagggggtg ctgcccggaaa aaaaagaaaga tgaggaggca 180
gcgggcgggtg cgcccaagc cgatacgcag gacgcaaccg cggagaagg cagccaagat 240
atggcggcag tttccggcaga aaatacagc aatggcggtg cggcaacaac ggacaacccc 300
aaaaaatgaag acgcgggggc gcaaaatgat atgccgaaaa atgccggcga atccgcaat 360
caaacaggga acaaccaacc cgccgggttct tcagattccg ccccccgcgtc aaacctgc 420
cctgcgaatg gcggtagcga ttttggaaagg acgaacgtgg gcaattctgt tggattgac 480
ggaccgtcgc aaaatataac gttgaccac tgtaaaggcg attcttgtaa tggtgataat 540
ttattggatg aagaagcacc gtcaaaaatca gaatttgaaa aattaagtga tgaagaaaaaa 600
attaagcgat ataaaaaaaaga cgagcaacgg gagaattttg tcgggttggg tgctgacagg 660
gtaaaaaaagg atggaactaa caaatataatc atcttctata cggacaaacc acctactcgt 720
tctgcacggt cgaggaggc gcttccggcc gagatccgc tgattcccg caatcaggcc 780
gatacgtcga ttgtggatgg ggaagcggtc agcctgacgg ggcattccgg caatatctc 840
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tatgccctcc gtgtcaagg cgaacccgca aaaggcgaaa tgcttggg cacggccgtg 960
tacaacggcg aagtgcgtca tttccatatg gaaaacggcc gtccgtaccc gtccggaggc 1020
aggtttgcg caaaaatgcga tttccggcagc aaatctgtgg acggcattat cgacagcgcc 1080
gatgatttgc atatgggtac gcaaaaattc aaagccgcca tcgatggaaa cggcttaag 1140
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gaggaagtgg cggaaaataa cagctatcgc cccgacagatg ctgaaaaggg cggattcggc 1260
gtgttgcg gcaaaaaaaga tcgggattga 1290

<210> 1200

<211> 429

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1200

Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Phe Pro Leu Ser
1 5 10 15

Ala Cys Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
20 25 30

Thr Pro Ser Lys Pro Ala Ala Pro Val Val Ala Glu Asn Ala Gly Glu
35 40 45

Gly Val Leu Pro Lys Glu Lys Lys Asp Glu Glu Ala Ala Gly Gly Ala
50 55 60

Pro Gln Ala Asp Thr Gln Asp Ala Thr Ala Gly Glu Gly Ser Gln Asp
65 70 75 80

Met Ala Ala Val Ser Ala Glu Asn Thr Gly Asn Gly Gly Ala Ala Thr
85 90 95

Thr Asp Asn Pro Lys Asn Glu Asp Ala Gly Ala Gln Asn Asp Met Pro
100 105 110

Gln Asn Ala Ala Glu Ser Ala Asn Gln Thr Gly Asn Asn Gln Pro Ala
115 120 125

Gly Ser Ser Asp Ser Ala Pro Ala Ser Asn Pro Ala Pro Ala Asn Gly
130 135 140

Gly Ser Asp Phe Gly Arg Thr Asn Val Gly Asn Ser Val Val Ile Asp
145 150 155 160

Gly Pro Ser Gln Asn Ile Thr Leu Thr His Cys Lys Gly Asp Ser Cys
165 170 175

Asn Gly Asp Asn Leu Leu Asp Glu Glu Ala Pro Ser Lys Ser Glu Phe
180 185 190

Glu Lys Leu Ser Asp Glu Glu Lys Ile Lys Arg Tyr Lys Lys Asp Glu
195 200 205

Gln Arg Glu Asn Phe Val Gly Leu Val Ala Asp Arg Val Lys Lys Asp
210 215 220

Gly Thr Asn Lys Tyr Ile Ile Phe Tyr Thr Asp Lys Pro Pro Thr Arg
225 230 235 240

Ser Ala Arg Ser Arg Arg Ser Leu Pro Ala Glu Ile Pro Leu Ile Pro
245 250 255

Val Asn Gln Ala Asp Thr Leu Ile Val Asp Gly Glu Ala Val Ser Leu
260 265 270

Thr Gly His Ser Gly Asn Ile Phe Ala Pro Glu Gly Asn Tyr Arg Tyr
275 280 285

Leu Thr Tyr Gly Ala Glu Lys Leu Pro Gly Gly Ser Tyr Ala Leu Arg
290 295 300

Val Gln Gly Glu Pro Ala Lys Glu Met Leu Val Gly Thr Ala Val
305 310 315 320

Tyr Asn Gly Glu Val Leu His Phe His Met Glu Asn Gly Arg Pro Tyr
325 330 335

<210> 1201
<211> 1467
<212> DNA
<213> *Neisseria meningitidis*

<400> 1201
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ggcggtggcg gatcgcccgatgtcaagtgc gcgacacgc tgtcaaaacc tgcccccct 120
gttggTTCTG aaaaagagac agaggcaag gaagatgCgc cacaggcagg ttctcaagga 180
caggcgccgc catccgcaca aggcatcaa gatatgtggg cgtttcgga agaaaataca 240
ggcaatggcg gtgcgttaac agcgataat cccaaaaatg aagacgagggt ggcacaaaat 300
gatatGCCGc aaaatGCCGc cggtacagat agttcgacac cgaatcacac cccgatccg 360
aatatgcTTG cggaaatata gaaaaatcaa gcaacggatg cggggaaatc gtctcagccg 420
gcaaaCCAAc cggatatggc aaatgcggcg gacggaatgc agggggacga tccgtcggca 480
ggcgggcaaa atgcccggcaa tacggctgCc caaggtgcaaa atcaagccgg aaacaatcaa 540
gccgcgggtt cttagatcc catcccccgC tcaaaacctg cacctgcgaa tggcggtagc 600
aatttgaa ggggtgattt ggctaattggc gtttgattt acggggccgtc gcaaaatata 660
acgttgaccc actgtaaagg cgattcttgt agtggcaata atttcttggg tgaagaagta 720
cagctaaat cagaatttga aaaattaagt gatgcagaca aaataagtaa ttacaagaaaa 780
gatgggaaga atgataaatt tgctggTTTg gttgccgata gtgtgcagat gaaggaaatc 840
aatcaatata ttatctttta taaacctaaa cccacttcat ttgcgcgatt taggcgttct 900
gcacggTCGA ggcggTCGCT tccggccgag atgcgcgtga ttcccgtaa tcagggcgat 960
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cccgaaggga attaccggta accggcaaaa ggcgaaatgc ttgcgggcgc ggcgtgtac 1080
gcccttcgtt ttcaaggcga aacggcgaag tactgcattt ccatacgaa aacggccgtc cgtacccgac caggggcagg 1140
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gatttgcata tgggtacgca aaaattcaaa gccgcacatcg atggaaacgg cttaagggg 1260
acttggacgg aaaatggcag cggggatgtt tccggaaagt tttacggccc ggccggcgag 1320
gaagtggcg gaaaatacag ctatcgcccc acagatgCggg aaaaggggcggg attcggcgtg 1380
tttgcggca aaaaagagca ggattga ggattga 1440
ggattga 1467

<210> 1202
<211> 488
<212> PRT
<213> *Neisseria meningitidis*

<400> 1202

Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Phe Ala Leu Ser
1 5 10 15

Ala Cys Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
20 25 30

Thr Leu Ser Lys Pro Ala Ala Pro Val Val Ser Glu Lys Glu Thr Glu
35 40 45

Ala Lys Glu Asp Ala Pro Gln Ala Gly Ser Gln Gly Gln Gly Ala Pro
50 55 60

Ser Ala Gln Gly Ser Gln Asp Met Ala Ala Val Ser Glu Glu Asn Thr
65 70 75 80

Gly Asn Gly Gly Ala Val Thr Ala Asp Asn Pro Lys Asn Glu Asp Glu
85 90 95

Val Ala Gln Asn Asp Met Pro Gln Asn Ala Ala Gly Thr Asp Ser Ser
100 105 110

Thr Pro Asn His Thr Pro Asp Pro Asn Met Leu Ala Gly Asn Met Glu
115 120 125

Asn Gln Ala Thr Asp Ala Gly Glu Ser Ser Gln Pro Ala Asn Gln Pro
130 135 140

Asp Met Ala Asn Ala Ala Asp Gly Met Gln Gly Asp Asp Pro Ser Ala
145 150 155 160

Gly Gly Gln Asn Ala Gly Asn Thr Ala Ala Gln Gly Ala Asn Gln Ala
165 170 175

Gly Asn Asn Gln Ala Ala Gly Ser Ser Asp Pro Ile Pro Ala Ser Asn
180 185 190

Pro Ala Pro Ala Asn Gly Gly Ser Asn Phe Gly Arg Val Asp Leu Ala
195 200 205

Asn Gly Val Leu Ile Asp Gly Pro Ser Gln Asn Ile Thr Leu Thr His
210 215 220

Cys Lys Gly Asp Ser Cys Ser Gly Asn Asn Phe Leu Asp Glu Glu Val
225 230 235 240

Gln Leu Lys Ser Glu Phe Glu Lys Leu Ser Asp Ala Asp Lys Ile Ser
245 250 255

Asn Tyr Lys Lys Asp Gly Lys Asn Asp Lys Phe Val Gly Leu Val Ala
260 265 270

Asp Ser Val Gln Met Lys Gly Ile Asn Gln Tyr Ile Ile Phe Tyr Lys
275 280 285

Pro Lys Pro Thr Ser Phe Ala Arg Phe Arg Arg Ser Ala Arg Ser Arg

290	295	300
Arg Ser Leu Pro Ala Glu Met Pro Leu Ile Pro Val Asn Gln Ala Asp		
305	310	315
320		
Thr Leu Ile Val Asp Gly Glu Ala Val Ser Leu Thr Gly His Ser Gly		
325	330	335
Asn Ile Phe Ala Pro Glu Gly Asn Tyr Arg Tyr Leu Thr Tyr Gly Ala		
340	345	350
Glu Lys Leu Pro Gly Gly Ser Tyr Ala Leu Arg Val Gln Gly Glu Pro		
355	360	365
Ala Lys Gly Glu Met Leu Ala Gly Ala Ala Val Tyr Asn Gly Glu Val		
370	375	380
Leu His Phe His Thr Glu Asn Gly Arg Pro Tyr Pro Thr Arg Gly Arg		
385	390	395
400		
Phe Ala Ala Lys Val Asp Phe Gly Ser Lys Ser Val Asp Gly Ile Ile		
405	410	415
Asp Ser Gly Asp Asp Leu His Met Gly Thr Gln Lys Phe Lys Ala Ala		
420	425	430
Ile Asp Gly Asn Gly Phe Lys Gly Thr Trp Thr Glu Asn Gly Ser Gly		
435	440	445
Asp Val Ser Gly Lys Phe Tyr Gly Pro Ala Gly Glu Glu Val Ala Gly		
450	455	460
Lys Tyr Ser Tyr Arg Pro Thr Asp Ala Glu Lys Gly Gly Phe Gly Val		
465	470	475
480		
Phe Ala Gly Lys Lys Glu Gln Asp		
485		

<210> 1203
 <211> 1494
 <212> DNA
 <213> Neisseria meningitidis

<400> 1203
 atgtttaaac gcagtgtgat tgcaatggct tgtattgttg cccttcagc ctgtgggggc 60
 ggcgggtggcg gatcgcccgaa tgtaactcg cgccgacacgc tgtcaaaacc tgccggccct 120
 gttgttactg aagatgtcgg ggaagaggtg ctgccaaag aaaagaaaaga tgaggaggcg 180
 gtgagtggtg cgccgcaagc cgatacgcag gacgcacccg cccgaaaagg cggtaagat 240
 atggcggcag tttcggcaga aaatacaggc aatggcggtg cggcaacaac ggataatccc 300
 gaaaataaag acgagggacc gaaaaatgat atgcccggaa atgcccggaa tacagatagt 360
 tcgacacccgaa atcacaccccg tgcaccgaat atgccaacca gagatatggg aaaccaagca 420
 ccggatgcgg gggaatcgccg acaaccggc aaccaaccgg atatggcaaa tgcggcggac 480
 ggaatgcagg gggacgatcc gtcggcagg gaaaatgccc gcaatacggc agatcaagct 540
 gcaaatacgat cttgaaaacaa tcaagtcggc ggctctcaaa atcctgcctc ttcaaccaat 600
 cctaacgcgc cgaatggcgg cagcgatttt ggaaggataa atgttagctaa tggcatcaag 660
 cttgacagcg gttcgaaaaa tgtaacgttg acacattgtaa aagacaaagt atgcgataga 720

gatttcttag atgaagaagc accaccaaaa tcagaatttg aaaaattaag tgatgaagaa 780
aaaattaata aatataaaaa agacgagcaa cgagagaatt ttgtcggtt ggttgctgac 840
agggtagaaa agaatggAAC taacaaatat gtcatcattt ataaagacaa gtccgcttca 900
tcttcatctg cgcgattcag gcgttctgca cggcgcggc ggtcgcttcc ggccgagatg 960
ccgctgattc ccgtcaatca ggcggatacg ctgattgtcg atggggaaagc ggtcagcctg 1020
acggggcatt ccggcaatat ctgcgcGCC gaaggaaatt accggtatct gacttacggg 1080
gcggaaaaat tgtccggcgg atcgtatgcc ctcagtgtgc aaggcgaacc ggcaaaaggc 1140
gaaatgctg cggcacggc cgtgtacaac ggcgaagtgc tgcatttcca tatggaaaac 1200
ggccgtccgt ccccgcccc aggccaggtt gccgcAAAAG tcgatttccc cagcaaatct 1260
gtggacggca ttatcgacag cggcgtatgtatgg gtacgcAAAGG attcaaAGCC 1320
gttatcgatg gaaacggctt taaggggact tggacggaaa atggcggcgg ggatgtttcc 1380
ggaaggTTT acggccccggc cggcgaagaa gtggcgggaa aatacagcta tcgcccgaca 1440
gatgcggaaa agggcggatt cggcgtgttt gccggcaaaa aagagcagga ttga 1494

<210> 1204

<211> 497

<212> PRT

<213> Neisseria meningitidis

<400> 1204

Met Phe Lys Arg Ser Val Ile Ala Met Ala Cys Ile Val Ala Leu Ser
1 5 10 15

Ala Cys Gly Gly Gly Gly Ser Pro Asp Val Lys Ser Ala Asp
20 25 30

Thr Leu Ser Lys Pro Ala Ala Pro Val Val Thr Glu Asp Val Gly Glu
35 40 45

Glu Val Leu Pro Lys Glu Lys Lys Asp Glu Glu Ala Val Ser Gly Ala
50 55 60

Pro Gln Ala Asp Thr Gln Asp Ala Thr Ala Gly Lys Gly Gly Gln Asp
65 70 75 80

Met Ala Ala Val Ser Ala Glu Asn Thr Gly Asn Gly Gly Ala Ala Thr
85 90 95

Thr Asp Asn Pro Glu Asn Lys Asp Glu Gly Pro Gln Asn Asp Met Pro
100 105 110

Gln Asn Ala Ala Asp Thr Asp Ser Ser Thr Pro Asn His Thr Pro Ala
115 120 125

Pro Asn Met Pro Thr Arg Asp Met Gly Asn Gln Ala Pro Asp Ala Gly
130 135 140

Glu Ser Ala Gln Pro Ala Asn Gln Pro Asp Met Ala Asn Ala Ala Asp
145 150 155 160

Gly Met Gln Gly Asp Asp Pro Ser Ala Gly Glu Asn Ala Gly Asn Thr
165 170 175

Ala Asp Gln Ala Ala Asn Gln Ala Glu Asn Asn Gln Val Gly Gly Ser
180 185 190

Gln Asn Pro Ala Ser Ser Thr Asn Pro Asn Ala Thr Asn Gly Gly Ser
195 200 205

Asp Phe Gly Arg Ile Asn Val Ala Asn Gly Ile Lys Leu Asp Ser Gly
210 215 220

Ser Glu Asn Val Thr Leu Thr His Cys Lys Asp Lys Val Cys Asp Arg
225 230 235 240

Asp Phe Leu Asp Glu Glu Ala Pro Pro Lys Ser Glu Phe Glu Lys Leu
245 250 255

Ser Asp Glu Glu Lys Ile Asn Lys Tyr Lys Lys Asp Glu Gln Arg Glu
260 265 270

Asn Phe Val Gly Leu Val Ala Asp Arg Val Glu Lys Asn Gly Thr Asn
275 280 285

Lys Tyr Val Ile Ile Tyr Lys Asp Lys Ser Ala Ser Ser Ser Ala
290 295 300

Arg Phe Arg Arg Ser Ala Arg Ser Arg Arg Ser Leu Pro Ala Glu Met
305 310 315 320

Pro Leu Ile Pro Val Asn Gln Ala Asp Thr Leu Ile Val Asp Gly Glu
325 330 335

Ala Val Ser Leu Thr Gly His Ser Gly Asn Ile Phe Ala Pro Glu Gly
340 345 350

Asn Tyr Arg Tyr Leu Thr Tyr Gly Ala Glu Lys Leu Ser Gly Gly Ser
355 360 365

Tyr Ala Leu Ser Val Gln Gly Glu Pro Ala Lys Gly Glu Met Leu Ala
370 375 380

Gly Thr Ala Val Tyr Asn Gly Glu Val Leu His Phe His Met Glu Asn
385 390 395 400

Gly Arg Pro Ser Pro Ser Gly Gly Arg Phe Ala Ala Lys Val Asp Phe
405 410 415

Gly Ser Lys Ser Val Asp Gly Ile Ile Asp Ser Gly Asp Asp Leu His
420 425 430

Met Gly Thr Gln Lys Phe Lys Ala Val Ile Asp Gly Asn Gly Phe Lys
435 440 445

Gly Thr Trp Thr Glu Asn Gly Gly Asp Val Ser Gly Arg Phe Tyr
450 455 460

Gly Pro Ala Gly Glu Glu Val Ala Gly Lys Tyr Ser Tyr Arg Pro Thr
465 470 475 480

Asp Ala Glu Lys Gly Gly Phe Gly Val Phe Ala Gly Lys Lys Glu Gln
485 490 495

Asp

<210> 1205

<211> 549

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1205

atgcacacccg gacaggcggt aagccgggtt ctgtctcgga cagtcattcc tctaggcata 60
ccgttgcgg tatgctcaag caacctaccc gaacgctcg ggcccagcgt cattgcgttc 120
tgtttggct tgctccgaat ggggttggc ctgcccata ttgttaccaa atgcgcgg 180
cgcccttacc gcacctttc acccttgccct gtgctgccaa agcagccatc ggcgtttt 240
ctttctgttc cacttccgt cgcttaccc cgccccggc ttaaccggca ttctaccctg 300
cggagcccg actttctcc ccgtatgcct tacgcgatac gcggcgactg tctgcccgtc 360
ccgtgtgcgg cgccgattat aacacgaaac gcaaaaatgc cgtctgaaac ggtacaggtt 420
tcagacggca tacagctaa actacacacc ctgttcagg ctggcttcga tgaagccgtc 480
caagtgcggc tccaatacgg ctttgtgggtt gccgacttcg tagcctgtac gcaagtcttt 540
gatgcgtga 549

<210> 1206

<211> 182

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1206

Met His Thr Gly Gln Ala Val Ser Arg Val Leu Ser Arg Thr Val Ile
1 5 10 15

Pro Leu Gly Ile Pro Leu Pro Val Cys Ser Ser Asn Leu Pro Glu Arg
20 25 30

Ser Ala Gly Ser Val Ile Ala Phe Cys Leu Val Leu Leu Arg Met Gly
35 40 45

Phe Gly Leu Pro His Ile Val Thr Lys Cys Ala Val Arg Pro Tyr Arg
50 55 60

Thr Phe Ser Pro Leu Pro Val Leu Pro Lys Gln Pro Ser Ala Val Leu
65 70 75 80

Leu Ser Val Pro Leu Ser Val Ala Leu Pro Arg Pro Ala Val Asn Arg
85 90 95

His Ser Thr Leu Arg Ser Pro Asp Phe Pro Pro Arg Met Pro Tyr Ala
100 105 110

Ile Arg Gly Asp Cys Leu Pro Val Pro Cys Ala Ala Arg Ile Ile Thr
115 120 125

Arg Asn Ala Lys Met Pro Ser Glu Thr Val Gln Val Ser Asp Gly Ile
130 135 140

Gln Pro Lys Leu His Thr Leu Phe Gln Ala Gly Phe Asp Glu Ala Val

145

150

155

160

Gln Val Ala Val Gln Tyr Gly Phe Val Val Ala Asp Phe Val Ala Cys
165 170 175

Thr Gln Val Phe Asp Ala
180

<210> 1207

<211> 549

<212> DNA

<213> Neisseria meningitidis

<400> 1207

atgcacacccg gacaggcggt aagccgggtt ctgtctcgga cagtcattcc tctaggcata 60
ccgttaccgg tatgctcaag caacctaccc gaacgctcg cgggcagcgt cattgcgttc 120
tgtttggctc tgctccgaat ggggttggc ctgcccata ttgttaccaa atgcgcgtg 180
cgcccttacc gcacccccc acccttacct gtgctgccaa agcagccatc ggcgttttgc 240
ctttctgttc cacttccgt cgcgttaccg cgccccggccg ttaaccggca ttctaccctg 300
cgtagcccg actttccccc ccgtatgcct tacgcgatac gcggcgactg tctgcccgtc 360
ccgtgtgcgg cgccgattat aacacgaaac aaaaaatgc cgtctgaaac ggtacaggtt 420
tcagacggca tacagcctaa actacacgccc ctgttccagg ctggcttcga tgaagccgtc 480
caagtgcaca tccaatacgg ctttgggttt gccgacttcg tagcctgtac gcaagtcttt 540
gatacgtga 549

<210> 1208

<211> 182

<212> PRT

<213> Neisseria meningitidis

<400> 1208

Met His Thr Gly Gln Ala Val Ser Arg Val Leu Ser Arg Thr Val Ile
1 5 10 15

Pro Leu Gly Ile Pro Leu Pro Val Cys Ser Ser Asn Leu Pro Glu Arg
20 25 30

Ser Ala Gly Ser Val Ile Ala Phe Cys Leu Val Leu Leu Arg Met Gly
35 40 45

Phe Gly Leu Pro His Ile Val Thr Lys Cys Ala Val Arg Pro Tyr Arg
50 55 60

Thr Phe Ser Pro Leu Pro Val Leu Pro Lys Gln Pro Ser Ala Val Leu
65 70 75 80

Leu Ser Val Pro Leu Ser Val Ala Leu Pro Arg Pro Ala Val Asn Arg
85 90 95

His Ser Thr Leu Arg Ser Pro Asp Phe Pro Pro Arg Met Pro Tyr Ala
100 105 110

Ile Arg Gly Asp Cys Leu Pro Val Pro Cys Ala Ala Arg Ile Ile Thr
115 120 125

Arg Asn Thr Lys Met Pro Ser Glu Thr Val Gln Val Ser Asp Gly Ile
130 135 140

Gln Pro Lys Leu His Ala Leu Phe Gln Ala Gly Phe Asp Glu Ala Val
145 150 155 160

Gln Val Ala Ile Gln Tyr Gly Phe Gly Val Ala Asp Phe Val Ala Cys
165 170 175

Thr Gln Val Phe Asp Thr
180

<210> 1209
<211> 549
<212> DNA
<213> Neisseria meningitidis

<400> 1209
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ccgttgcgg tatgctcaag caacctaccc gaacgctcg cgccgacgcgt cattgcgttc 120
tgtttggctc tgctccgaat ggggtttgc ctgcccata ttgttaccaa atgcgcggtg 180
cgcccttacc gcacctttc acccttgct gtgctgccaa agcagccatc ggccgttttg 240
ctttctgttc cacttccgt cgcgttaccc cgcccgccg ttaaccggca ttctaccctg 300
cggagcccg acttccctcc cctgtatgcct tacgcgatac gcggcgaactg tctgcccgtc 360
ccgtgtgcgg cgccgattat aacacgaaac gaaaaatgc cgtctgaaac ggtacaggtt 420
tcagacggca tacagcctaa actacacgcc ctgttgcagg ctggcttcga taaagccgtc 480
caagtgcggc tccaatacgg ctttgggttt gccgacttcg tagcctgtgc gcaagtctt 540
aatgcgtga 549

<210> 1210
<211> 182
<212> PRT
<213> Neisseria meningitidis

<400> 1210
Met His Thr Gly Gln Ala Val Ser Arg Val Leu Ser Arg Thr Val Ile
1 5 10 15

Pro Leu Gly Ile Pro Leu Pro Val Cys Ser Ser Asn Leu Pro Glu Arg
20 25 30

Ser Ala Gly Ser Val Ile Ala Phe Cys Leu Val Leu Leu Arg Met Gly
35 40 45

Phe Gly Leu Pro His Ile Val Thr Lys Cys Ala Val Arg Pro Tyr Arg
50 55 60

Thr Phe Ser Pro Leu Pro Val Leu Pro Lys Gln Pro Ser Ala Val Leu
65 70 75 80

Leu Ser Val Pro Leu Ser Val Ala Leu Pro Arg Pro Ala Val Asn Arg
85 90 95

His Ser Thr Leu Arg Ser Pro Asp Phe Pro Pro Arg Met Pro Tyr Ala

100	105	110
Ile Arg Gly Asp Cys Leu Pro Val Pro Cys Ala Ala Arg Ile Ile Thr		
115	120	125
Arg Asn Ala Lys Met Pro Ser Glu Thr Val Gln Val Ser Asp Gly Ile		
130	135	140
Gln Pro Lys Leu His Ala Leu Phe Gln Ala Gly Phe Asp Lys Ala Val		
145	150	155
Gln Val Ala Val Gln Tyr Phe Gly Val Ala Asp Phe Val Ala Cys		
165	170	175
Ala Gln Val Phe Asn Ala		
180		

<210> 1211
<211> 1179
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1211

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<210> 1212
<211> 392
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1212

Met Ala Lys Met Met Lys Trp Ala Ala Val Ala Ala Val Ala Ala Ala			
1	5	10	15
Ala Val Trp Gly Gly Trp Ser Tyr Leu Lys Pro Glu Pro Gln Ala Ala			
20	25	30	

Tyr Ile Thr Glu Ala Val Arg Arg Gly Asp Ile Ser Arg Thr Val Ser
35 40 45

Ala Thr Gly Glu Ile Ser Pro Ser Asn Leu Val Ser Val Gly Ala Gln
50 55 60

Ala Ser Gly Gln Ile Lys Lys Leu Tyr Val Lys Leu Gly Gln Gln Val
65 70 75 80

Lys Lys Gly Asp Leu Ile Ala Glu Ile Asn Ser Thr Thr Gln Thr Asn
85 90 95

Thr Ile Asp Met Glu Lys Ser Lys Leu Glu Thr Tyr Gln Ala Lys Leu
100 105 110

Val Ser Ala Gln Ile Ala Leu Gly Ser Ala Glu Lys Lys Tyr Lys Arg
115 120 125

Gln Ala Ala Leu Trp Lys Asp Asp Ala Thr Ser Lys Glu Asp Leu Glu
130 135 140

Ser Ala Gln Asp Ala Leu Ala Ala Lys Ala Asn Val Ala Glu Leu
145 150 155 160

Lys Ala Leu Ile Arg Gln Ser Lys Ile Ser Ile Asn Thr Ala Glu Ser
165 170 175

Asp Leu Gly Tyr Thr Arg Ile Thr Ala Thr Met Asp Gly Thr Val Val
180 185 190

Ala Ile Pro Val Glu Glu Gly Gln Thr Val Asn Ala Ala Gln Ser Thr
195 200 205

Pro Thr Ile Val Gln Leu Ala Asn Leu Asp Met Met Leu Asn Lys Met
210 215 220

Gln Ile Ala Glu Gly Asp Ile Thr Lys Val Lys Ala Gly Gln Asp Ile
225 230 235 240

Ser Phe Thr Ile Leu Ser Glu Pro Asp Thr Pro Ile Lys Ala Lys Leu
245 250 255

Asp Ser Val Asp Pro Gly Leu Thr Thr Met Ser Ser Gly Gly Tyr Asn
260 265 270

Ser Ser Thr Asp Thr Ala Ser Asn Ala Val Tyr Tyr Ala Arg Ser
275 280 285

Phe Val Pro Asn Pro Asp Gly Lys Leu Ala Thr Gly Met Thr Thr Gln
290 295 300

Asn Thr Val Glu Ile Asp Gly Val Lys Asn Val Leu Leu Ile Pro Ser
305 310 315 320

Leu Thr Val Lys Asn Arg Gly Gly Lys Ala Phe Val Arg Val Leu Gly
325 330 335

Ala Asp Gly Lys Ala Val Glu Arg Glu Ile Arg Thr Gly Met Lys Asp
340 345 350

Ser Met Asn Thr Glu Val Lys Ser Gly Leu Lys Glu Gly Asp Lys Val
355 360 365

Val Ile Ser Glu Ile Thr Ala Ala Glu Gln Gln Glu Ser Gly Glu Arg
370 375 380

Ala Leu Gly Gly Pro Pro Arg Arg
385 390

<210> 1213

<211> .1005

<212> DNA

<213> Neisseria meningitidis

<400> 1213

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aatacggaaa aatccaagtt ggaaacgtat caggcgaagc tgggtgtcggc acagattgca 180
ttgggcagcg cgagaagaa atataagcgt caggcggcgt tatggaagga aaacgcgact 240
tccaaagagg atttgaaag cgccgaggat gcgttgcgg ccgc当地aagc caatgttgcc 300
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<210> 1214

<211> 334

<212> PRT

<213> Neisseria meningitidis

<400> 1214

Val Ser Val Gly Ala Gln Ala Ser Gly Gln Ile Lys Ile Leu Tyr Val
1 5 10 15

Lys Leu Gly Gln Gln Val Lys Lys Gly Asp Leu Ile Ala Glu Ile Asn
20 25 30

Ser Thr Ser Gln Thr Asn Thr Leu Asn Thr Glu Lys Ser Lys Leu Glu
35 40 45

Thr Tyr Gln Ala Lys Leu Val Ser Ala Gln Ile Ala Leu Gly Ser Ala
50 55 60

Glu Lys Lys Tyr Lys Arg Gln Ala Ala Leu Trp Lys Glu Asn Ala Thr
65 70 75 80

Ser Lys Glu Asp Leu Glu Ser Ala Gln Asp Ala Phe Ala Ala Ala Lys
85 90 95

Ala Asn Val Ala Glu Leu Lys Ala Leu Ile Arg Gln Ser Lys Ile Ser
100 105 110

Ile Asn Thr Ala Glu Ser Glu Leu Gly Tyr Thr Arg Ile Thr Ala Thr
115 120 125

Met Asp Gly Thr Val Val Ala Ile Leu Val Glu Glu Gly Gln Thr Val
130 135 140

Asn Ala Ala Gln Ser Thr Pro Thr Ile Val Gln Leu Ala Asn Leu Asp
145 150 155 160

Met Met Leu Asn Lys Met Gln Ile Ala Glu Gly Asp Ile Thr Lys Val
165 170 175

Lys Ala Gly Gln Asp Ile Ser Phe Thr Ile Leu Ser Glu Pro Asp Thr
180 185 190

Pro Ile Lys Ala Lys Leu Asp Ser Val Asp Pro Gly Leu Thr Thr Met
195 200 205

Ser Ser Gly Gly Tyr Asn Ser Ser Thr Asp Thr Ala Ser Asn Ala Val
210 215 220

Tyr Tyr Tyr Ala Arg Ser Phe Val Pro Asn Pro Asp Gly Lys Leu Ala
225 230 235 240

Thr Gly Met Thr Thr Gln Asn Thr Val Glu Ile Asp Gly Val Lys Asn
245 250 255

Val Leu Ile Ile Pro Ser Leu Thr Val Lys Asn Arg Gly Gly Lys Ala
260 265 270

Phe Val Arg Val Leu Gly Ala Asp Gly Lys Ala Ala Glu Arg Glu Ile
275 280 285

Arg Thr Gly Met Arg Asp Ser Met Asn Thr Glu Val Lys Ser Gly Leu
290 295 300

Lys Glu Gly Asp Lys Val Val Ile Ser Glu Ile Thr Ala Ala Glu Gln
305 310 315 320

Gln Glu Ser Gly Glu Arg Ala Leu Gly Gly Pro Pro Arg Arg
325 330

<210> 1215
<211> 1179
<212> DNA
<213> Neisseria meningitidis

<400> 1215

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agcgcggaga agaaatataa gcgtcaggcg gcgttggta aggatgatgc gaccgctaaa 420
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<210> 1216

<211> 392

<212> PRT

<213> Neisseria meningitidis

<400> 1216

Met Ala Lys Met Met Lys Trp Ala Ala Val Ala Val Ala Ala Ala
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Ala Val Trp Gly Gly Trp Ser Tyr Leu Lys Pro Glu Pro Gln Ala Ala
20 25 30

Tyr Ile Thr Glu Thr Val Arg Arg Gly Asp Ile Ser Arg Thr Val Ser
35 40 45

Ala Thr Gly Glu Ile Ser Pro Ser Asn Leu Val Ser Val Gly Ala Gln
50 55 .60

Ala Ser Gly Gln Ile Lys Lys Leu Tyr Val Lys Leu Gly Gln Gln Val
65 70 75 80

Lys Lys Gly Asp Leu Ile Ala Glu Ile Asn Ser Thr Ser Gln Thr Asn
85 90 95

Thr Leu Asn Thr Glu Lys Ser Lys Leu Glu Thr Tyr Gln Ala Lys Leu
100 105 110

Val Ser Ala Gln Ile Ala Leu Gly Ser Ala Glu Lys Lys Tyr Lys Arg
115 120 125

Gln Ala Ala Leu Trp Lys Asp Asp Ala Thr Ala Lys Glu Asp Leu Glu
130 135 140

Ser Ala Gln Asp Ala Leu Ala Ala Lys Ala Asn Val Ala Glu Leu

145	150	155	160
Lys Ala Leu Ile Arg Gln Ser Lys Ile Ser Ile Asn Thr Ala Glu Ser			
165	170	175	
Glu Leu Gly Tyr Thr Arg Ile Thr Ala Thr Met Asp Gly Thr Val Val			
180	185	190	
Ala Ile Leu Val Glu Glu Gly Gln Thr Val Asn Ala Ala Gln Ser Thr			
195	200	205	
Pro Thr Ile Val Gln Leu Ala Asn Leu Asp Met Met Leu Asn Lys Met			
210	215	220	
Gln Ile Ala Glu Gly Asp Ile Thr Lys Val Lys Ala Gly Gln Asp Ile			
225	230	235	240
Ser Phe Thr Ile Leu Ser Glu Pro Asp Thr Pro Ile Lys Ala Lys Leu			
245	250	255	
Asp Ser Val Asp Pro Gly Leu Thr Thr Met Ser Ser Gly Gly Tyr Asn			
260	265	270	
Ser Ser Thr Asp Thr Ala Ser Asn Ala Val Tyr Tyr Tyr Ala Arg Ser			
275	280	285	
Phe Val Pro Asn Pro Asp Gly Lys Leu Ala Thr Gly Met Thr Thr Gln			
290	295	300	
Asn Thr Val Glu Ile Asp Gly Val Lys Asn Val Leu Ile Ile Pro Ser			
305	310	315	320
Leu Thr Val Lys Asn Arg Gly Gly Arg Ala Phe Val Arg Val Leu Gly			
325	330	335	
Ala Asp Gly Lys Ala Ala Glu Arg Glu Ile Arg Thr Gly Met Arg Asp			
340	345	350	
Ser Met Asn Thr Glu Val Lys Ser Gly Leu Lys Glu Gly Asp Lys Val			
355	360	365	
Val Ile Ser Glu Ile Thr Ala Ala Glu Gln Gln Glu Ser Gly Glu Arg			
370	375	380	
Ala Leu Gly Gly Pro Pro Arg Arg			
385	390		

<210> 1217
 <211> 798
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1217
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aaagtgttga gcgtcagcga aacaccggc aaaggcattt acgaaagtgt cgtcagcggc 240
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atgcgtaaag gcaaattccc ggtcggcggc agcatctgca acaatcccg tccggaaacc 660
acttccttgg gccaacagtt cggcttcaac ggcacgccc cccttcgtct tccccaaacgg 720
gcccacccaa agcggttaca gcccgtatgcc ccaactggag gaaatcatcc gcaaaaacca 780
gcagtaaacc cgcaatga 798

<210> 1218

<211> 265

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1218

Met Lys Thr Lys Leu Ile Lys Ile Leu Thr Pro Phe Thr Val Leu Pro
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Leu Leu Ala Cys Gly Gln Thr Pro Val Ser Asn Ala Asn Ala Glu Ser
20 25 30

Ala Val Lys Ala Glu Ser Ala Gly Lys Ser Val Ala Ala Ser Leu Lys
35 40 45

Ala Arg Leu Glu Lys Thr Tyr Ser Ala Gln Asp Leu Lys Val Leu Ser
50 55 60

Val Ser Glu Thr Pro Val Lys Gly Ile Tyr Glu Val Val Val Ser Gly
65 70 75 80

Arg Gln Ile Ile Tyr Thr Asp Ala Glu Gly Gly Tyr Met Phe Val Gly
85 90 95

Glu Leu Ile Asn Ile Asp Thr Arg Lys Asn Leu Thr Glu Glu Arg Ala
100 105 110

Ala Asp Leu Asn Lys Ile Asp Phe Ala Ser Leu Pro Leu Asp Lys Ala
115 120 125

Ile Lys Glu Val Arg Gly Asn Gly Lys Leu Lys Val Ala Val Phe Ser
130 135 140

Asp Pro Asp Cys Pro Phe Cys Lys Arg Leu Glu His Glu Phe Glu Lys
145 150 155 160

Met Thr Asp Val Thr Val Tyr Ser Phe Met Met Pro Ile Ala Gly Leu
165 170 175

His Pro Asp Ala Ala Arg Lys Ala Gln Ile Leu Trp Cys Gln Pro Asp
180 185 190

Arg Ala Lys Ala Trp Thr Asp Trp Met Arg Lys Gly Lys Phe Pro Val
195 200 205

Gly Gly Ser Ile Cys Asp Asn Pro Val Ala Glu Thr Thr Ser Leu Gly
210 215 220

Glu Gln Phe Gly Phe Asn Gly Thr Pro Thr Leu Arg Leu Pro Gln Arg
225 230 235 240

Ala His Pro Lys Arg Leu Gln Pro Asp Ala Pro Thr Gly Gly Asn His
245 250 255

Pro Gln Lys Pro Ala Val Asn Pro Gln
260 265

210 <210> 1219

<211> 783

<212> DNA

<213> *Neisseria meningitidis*

<400> 1219

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acttccttgg ggcgaacaatt cggcttcaac ggacgcgcga ccctcgctt ccccaacggg 720
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<210> 1220

<211> 260

<212> PRT

<213> Neisseria meningitidis

<400> 1220

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Leu Leu Ala Cys Gly Gln Thr Pro Val Ser Asn Ala Asn Ala Glu Pro
20 25 30

Ala Arg Leu Glu Lys Thr Tyr Ser Ala Gln Asp Leu Lys Val Leu Ser
50 55 60

Val Ser Glu Thr Pro Val Lys Gly Ile Tyr Glu Val Val Val Ser Gly
65 70 75 80

Arg Gln Ile Ile Tyr Thr Asp Ala Glu Gly Gly Tyr Met Phe Val Gly
 85 90 95
 Glu Leu Ile Asn Ile Asp Thr Arg Lys Asn Leu Thr Glu Glu Arg Ala
 100 105 110
 Ala Asp Leu Asn Lys Ile Asp Phe Ala Ser Leu Pro Leu Asp Lys Ala
 115 120 125
 Ile Lys Glu Val Arg Gly Asn Gly Lys Leu Lys Val Ala Val Phe Ser
 130 135 140
 Asp Pro Asp Cys Pro Phe Cys Lys Arg Leu Glu His Glu Phe Glu Lys
 145 150 155 160
 Met Thr Asp Val Thr Val Tyr Ser Phe Met Met Pro Ile Ala Gly Leu
 165 170 175
 His Pro Asp Ala Ala Arg Lys Ala Gln Ile Leu Trp Cys Gln Pro Asp
 180 185 190
 Arg Ala Lys Ala Trp Thr Asp Trp Met Arg Lys Gly Lys Phe Pro Val
 195 200 205
 Gly Gly Ser Ile Cys Asp Asn Pro Val Ala Glu Thr Thr Ser Leu Gly
 210 215 220
 Glu Gln Phe Gly Phe Asn Gly Thr Pro Thr Leu Val Phe Pro Asn Gly
 225 230 235 240
 Arg Ser Gln Ser Gly Tyr Ser Pro Met Pro Gln Leu Glu Ile Ile
 245 250 255
 Arg Lys Asn Gln
 260

<210> 1221
 <211> 783
 <212> DNA
 <213> Neisseria meningitidis

<400> 1221
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 aaatccgttg cccgcctttt gaaagcgcgt ttggaaaaaaa cctattccgc ccaagatttg 180
 aaagtgtga gcgtcagcga aacacccgtc aaaggcattt acgaagtctgt cgtcagcggc 240
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 taa 783

<210> 1223
<211> 619
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1223
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acaattttc cgaaggcctgc cggcacgcct tggcatcggg tgccggcgggtt caagtcgaat 180
cggcggacgc gtggcgtgaa gccgttgaaa aaacccatc tggcgagggg ggcggaatgc 240
agatgcaggc gcgcgtggac ggcttatc cacaacatc cggagcgggc gcgagaatcg 300
ccgaggcggt gcccggaaagcg gtatgcggac atcggggcgtt atagtgatac aatccgtatc 360
cgagtttcc ggttggagca tcgtatgagt atttatgcgc tcgcgcacat catccacctg 420
tattgcgccta ccgccttgcg tggcgccgtt tttttgaag tgctgggttt gtccgtcctg 480
catacgggac gggtgtcgcg cgaggcgcgg cgcgaagtgg aaaaggcaat gtcttaccgc 540
gccgtcaggg tgatgccgtt tgccgtcggc ctgctgttcg ccagggaaac tctagagtcg 600
actgcagcag catgcctc 619

<210> 1224
<211> 206
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1224
Met Arg Ile Thr Cys Ala Pro Met Ser Leu Leu Ser Ala Ala Val Trp
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20 25 30
Arg Arg Tyr Ser Ala Phe Arg Pro Thr Ile Phe Pro Lys Pro Ala Gly
35 40 45
Thr Pro Trp His Arg Val Arg Arg Phe Lys Ser Asn Arg Arg Thr Arg
50 55 60
Gly Val Lys Pro Leu Lys Lys Pro Tyr Leu Ala Arg Gly Ala Glu Cys
65 70 75 80
Arg Cys Arg Arg Ala Trp Thr Ala Leu Ser His Asn Ile Ala Glu Arg
85 90 95
Ala Arg Glu Ser Pro Arg Arg Cys Gly Lys Arg Tyr Ala Asp Ile Gly
100 105 110
Gly Asp Ser Asp Thr Ile Arg Ile Arg Val Phe Arg Leu Glu His Arg
115 120 125
Met Ser Ile Tyr Ala Val Ala His Ile Ile His Leu Tyr Cys Ala Thr
130 135 140
Ala Phe Val Gly Gly Val Phe Phe Glu Val Leu Val Leu Ser Val Leu
145 150 155 160

His Thr Gly Arg Val Ser Arg Glu Ala Arg Arg Glu Val Glu Lys Ala
165 170 175

Met Ser Tyr Arg Ala Val Arg Val Met Pro Phe Ala Val Gly Leu Leu
180 185 190

Phe Ala Arg Gly Thr Leu Glu Ser Thr Ala Ala Ala Cys Pro
195 200 205

<210> 1225

<211> 834

<212> DNA

<213> Neisseria meningitidis

<400> 1225

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acaatttttc cgaaggctgc cgacacgcct tggcatcggg tgccggcggtt caagtcgaat 180
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cgagttttcc gtttggagca tcgtatgagt atttatgcgg tcgcgcacat cgttcatctg 420
tattgccta ttgcctttgt cggcggcggt tttttgttgaag tgctgggtt gtccgtctg 480
catacgggac gggtgtcgcg cgaggcgcgg cgcaagtgg aaaaggcaat gtcttaccgc 540
gccgtcaggg tgatgccgtt tggtgtcgga ctgctgttcg ccagcggcat cgtgatggcg 600
gcaaaccgct atcttctat attgggcgaa ccgttgcca cttccttcgg tacgatgctg 660
acgctgaaaa tcctgttggc gttcagcgtt ttggcgcact tcgccatcgc cgtcgtcaaa 720
atggcgcgtt ccacactgac ggtcggttgg tcgaaataca tacacgcgt cgtcttacc 780
catatgctgc tgattgtctt tttggcaaaa gcgatgtttt atatcagctg gtaa 834

<210> 1226

<211> 277

<212> PRT

<213> Neisseria meningitidis

<400> 1226

Met Arg Ile Thr Cys Ala Pro Met Ser Leu Leu Ser Ala Ala Val Trp
1 5 10 15

Ser Ile Arg Val Val Arg Thr Ser Ser Asn Arg Phe Pro Ala Ala Phe
20 25 30

Arg Arg Tyr Ser Ala Phe Gln Pro Thr Ile Phe Pro Lys Pro Ala Asp
35 40 45

Thr Pro Trp His Arg Val Arg Arg Phe Lys Ser Asn Arg Arg Met Arg
50 55 60

Gly Gly Lys Pro Leu Lys Lys Pro Tyr Arg Pro Arg Gly Gly Gly Cys
65 70 75 80

Arg Cys Arg Arg Ala Trp Thr Ala Leu Ser His Asn Ile Ala Glu Arg
85 90 95

Ala Arg Glu Ser Pro Arg Arg Cys Gly Lys Arg Tyr Ala Asp Ile Gly
100 105 110

Gly Asp Ser Asp Thr Ile Arg Ile Arg Val Phe Arg Leu Glu His Arg
115 120 125

Met Ser Ile Tyr Ala Val Ala His Ile Val His Leu Tyr Cys Ala Ile
130 135 140

Ala Phe Val Gly Gly Val Phe Phe Glu Val Leu Val Leu Ser Val Leu
145 150 155 160

His Thr Gly Arg Val Ser Arg Glu Ala Arg Arg Glu Val Glu Lys Ala
165 170 175

Met Ser Tyr Arg Ala Val Arg Val Met Pro Phe Val Val Gly Leu Leu
180 185 190

Phe Ala Ser Gly Ile Val Met Ala Ala Asn Arg Tyr Leu Ser Ile Leu
195 200 205

Gly Glu Pro Phe Ala Thr Ser Phe Gly Thr Met Leu Thr Leu Lys Ile
210 215 220

Leu Leu Ala Phe Ser Val Leu Ala His Phe Ala Ile Ala Val Val Lys
225 230 235 240

Met Ala Arg Ser Thr Leu Thr Val Gly Trp Ser Lys Tyr Ile His Ala
245 250 255

Val Val Phe Thr His Met Leu Leu Ile Val Phe Leu Ala Lys Ala Met
260 265 270

Phe Tyr Ile Ser Trp

275

<210> 1227
<211> 834
<212> DNA
<213> Neisseria meningitidis

<400> 1227

atgcgtatta cctgtgcgcc gatgtcgctt ttgtcggcgg cagtctggc gattcggct 60
gtcagaacat catcgaaccg cttccctgcg gcgttccgac gatattcgc ttttcgacct 120
acaattttc cgaagcctgc cgccacgcct tggcatcggg tgcggcggtt caagtcgaat 180
cgccggacgc gtggcggaa gccgttgaaa aaaacttatac gtccgaggag ggcggaatgc 240
agatgcaggc ggcgcggac ggcttatcg cacaacatcg cggagcgggc gcgagaatcg 300
ccgaggcgggt acgggaagcg gtatgcggac atcggggacg atagtatac aatccgtatc 360
cgagtttcc ggttggagta ccgtatgagt atttatgccc tcgcgcacat cgtcccacctg 420
tattgcgcca tcgccttgt cgccggcgtg tttttgaag tgctggttt gtccgtcctg 480
catacggac ggggtgcgtg cgaggcgcgg cgcgaagtgg aaaaggcaat gtcttaccgc 540
gccgtcaggg tggatgcgtt tgggtcgga ctgctgtcg ccagcggcat cgtgatggcg 600
gcaaaccgct atctttctat atgggcgaa ccgttgcca cttccctcgg tacgatgctg 660
acgctgaaaa tcctgtggc gtcagcgtg ttggcgcact tcgccatcgc cgtcgtcaaa 720
atggcgcgtt ccacactgac cgtcggctgg tcgaaataca tacacaccgt cgtcttacc 780

catatgctgc tgattgtctt tttggcaaaa gcgatgtttt atatcagctg gtaa 834

<210> 1228

<211> 277

<212> PRT

<213> Neisseria meningitidis

<400> 1228

Met Arg Ile Thr Cys Ala Pro Met Ser Leu Leu Ser Ala Ala Val Trp
1 5 10 15

Ser Ile Arg Ala Val Arg Thr Ser Ser Asn Arg Phe Pro Ala Ala Phe
20 25 30

Arg Arg Tyr Ser Ala Phe Arg Pro Thr Ile Phe Pro Lys Pro Ala Gly
35 40 45

Thr Pro Trp His Arg Val Arg Arg Phe Lys Ser Asn Arg Arg Thr Arg
50 55 60

Gly Gly Lys Pro Leu Lys Lys Thr Tyr Arg Pro Arg Arg Ala Glu Cys
65 70 75 80

Arg Cys Arg Arg Ala Arg Thr Ala Leu Ser His Asn Ile Ala Glu Arg
85 90 95

Ala Arg Glu Ser Pro Arg Arg Tyr Gly Lys Arg Tyr Ala Asp Ile Gly
100 105 110

Asp Asp Ser Asp Thr Ile Arg Ile Arg Val Phe Arg Leu Glu Tyr Arg
115 120 125

Met Ser Ile Tyr Ala Val Ala His Ile Val His Leu Tyr Cys Ala Ile
130 135 140

Ala Phe Val Gly Gly Val Phe Phe Glu Val Leu Val Leu Ser Val Leu
145 150 155 160

His Thr Gly Arg Val Ser Cys Glu Ala Arg Arg Glu Val Glu Lys Ala
165 170 175

Met Ser Tyr Arg Ala Val Arg Val Met Pro Phe Val Val Gly Leu Leu
180 185 190

Phe Ala Ser Gly Ile Val Met Ala Ala Asn Arg Tyr Leu Ser Ile Leu
195 200 205

Gly Glu Pro Phe Ala Thr Ser Phe Gly Thr Met Leu Thr Leu Lys Ile
210 215 220

Leu Leu Ala Phe Ser Val Leu Ala His Phe Ala Ile Ala Val Val Lys
225 230 235 240

Met Ala Arg Ser Thr Leu Thr Val Gly Trp Ser Lys Tyr Ile His Thr
245 250 255

Val Val Phe Thr His Met Leu Leu Ile Val Phe Leu Ala Lys Ala Met
260 265 270

Phe Tyr Ile Ser Trp
275

<210> 1229
<211> 885
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1229

atgctcggga tggcgccgca cgacggccag cagggcatcg ccgcgatatt gttgccacgc 60
cggcagcagt tttccgcct cgtctcgcc ccgataaaacg cgcgtgctgc cgcacacggc 120
aaccggccgg cctccgatgc gttttcaaa ctgccccgcc agcgtttca tgtcttcaga 180
cgccatcagg tcgtatggg tattgcccga cacctgcacg gatgccgcgc ccaatttcgc 240
caaccgcgc ccatccgcct ccgtctgcgc cagacagccc gtcagcgaag cggctgcggg 300
acggatcagg cggcggactt tcagataacc gttcagcgtat tttccgaca gccgcgcatt 360
cgccaaaaac agcggcacac cccgtcgccc gcattcccttc atcagattgg gccagatttc 420
ggtttccatc aaaatgccga acatcgggcg gtgttcgcgc aaaaactgcc gtacccacgt 480
tttttgtca tacggaagat agcggcattt cgcacgggaa aacagaacctt ggcgggtt 540
ccgtcccggtc ggggtcatct gcgtcatcag cagcggcgca tcgggaaaac gcccggcaa 600
ctcgcgtatc aagggtctggg cggcacgcgt ttctccgacc gaaacggcgt gtagccaaac 660

cgcgcggta acgggattcg gatgcggctt gccgaaacgc tcgtccctat ggcgcggta 720
tgccggggca ctccggagc gtttgtccaa ataacccgt atccatatacg ggcgaagcag 780
ccacaataca tcataaagcc attggaacat ctttcttattt cctgcaaaac aaatgccgtc 840
cgaacgggttc ggacggcatt tcggcaacgg aatcaaataat cgtag 885

<210> 1230

<211> 294

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1230

Met Leu Gly Met Ala Arg His Asp Gly Gln Gln Gly Ile Ala Ala Ile
1 5 10 15

Leu Leu Pro Arg Arg Gln Gln Phe Phe Arg Leu Val Phe Ala Pro Ile
20 25 30

Asn Ala Arg Ala Ala Ala His Gly Asn Arg Pro Ala Ser Asp Ala Phe
35 40 45

Phe Lys Leu Pro Arg Gln Arg Phe His Val Phe Arg Arg His Gln Val
50 55 60

Val Phe Gly Ile Ala Ala His Leu His Gly Cys Arg Ala Gln Phe Arg
65 70 75 80

Gln Pro Arg Arg Ile Arg Leu Arg Leu Arg Gln Thr Ala Arg Gln Arg
85 90 95

Ser Gly Cys Gly Thr Asp Gln Ala Ala Asp Phe Gln Ile Thr Val Gln
100 105 110

Arg Phe Phe Arg Gln Pro Arg Ile Arg Gln Lys Gln Arg His Thr Arg
 115 120 125
 Ser Pro Ala Phe Leu His Gln Ile Gly Pro Asp Phe Gly Phe His Gln
 130 135 140
 Asn Ala Glu His Arg Ala Val Phe Ala Gln Lys Leu Pro Tyr Pro Arg
 145 150 155 160
 Phe Phe Val Ile Arg Lys Ile Ala Ala Leu Arg Ile Gly Lys Gln Asn
 165 170 175
 Leu Arg Gly Phe Pro Ser Arg Arg Gly His Leu Arg His Gln Gln Arg
 180 185 190
 Arg Ile Gly Lys Thr Pro Pro Gln Leu Ala Tyr Gln Gly Leu Gly Gly
 195 200 205
 Thr Arg Phe Ser Asp Arg Asn Gly Val Tyr Pro Asn Arg Ala Gly Asn
 210 215 220
 Gly Ile Arg Met Arg Leu Ala Glu Thr Leu Val Pro Met Arg Pro Val
 225 230 235 240
 Cys Arg Gly Thr Ser Gly Ala Phe Val Gln Ile Thr Pro Tyr Pro Tyr
 245 250 255
 Arg Arg Lys Gln Pro Gln Tyr Ile Ile Lys Pro Leu Glu His Leu Ser
 260 265 270
 Ile Ser Cys Lys Thr Asn Ala Val Arg Thr Val Arg Thr Ala Phe Arg
 275 280 285
 Gln Arg Asn Gln Ile Ser
 290

<210> 1231
 <211> 885
 <212> DNA
 <213> Neisseria meningitidis

<400> 1231
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 cggccaggat tttccgcct cgttttcacc ccgataaaacg cgcgtgtgc cgcacacggc 120
 aaccggccgg cctccgatgc gtttttcaaa ctgccccgccc agcgtttca tctgttccga 180
 cggtatgtatgc tcgtattttgg tattgcccga cacctgcacg gatgccgcgc ccaatttcgc 240
 caaccgcgcgc gcatccgcct ctgtctgcgc cagacaccccc gtcagcgaag cggcggcagg 300
 acggatcagg cggcggactt tcaagataacc gttcaacgat tttccgaca gccgcgcatt 360
 cgccaaaaac agcggcacac ccgcgcgcgc gcattccctc atcagggttgg gccagatttc 420
 ggtttccatc aaaatgccga acatcgggcg gtgttgcgc aaaaactgccc gtaccacgt 480
 tttttgtca tacggaaat agcggcatttgc cgcattcggtt aacagaactt ggcgggtttc 540
 cccgccccgttc ggggtcatct gcgtcatcag cagcggcgcga tcgggaaaac gccgcccgc 600
 ctcgcgtatc aaggactggg cggcacgcgt ttctccgacc gaaacggcggt gtatccaaac 660
 cgcgcggta acgggatttcg gatacggctt gccgaaacgc tcgtccccat ggcggccata 720
 tgccggggca cttccggagc gtttgtccaa ataacgcgtt atccatatcg gcgcaaggcag 780

ccacaataca tcataaagcc attggaacat ctttctattt cctgaaaaac aaatgccgtc 840
tgaacggttc agacggcatt tcggcaacgg aatcaaatat cgtag 885

<210> 1232

<211> 294

<212> PRT

<213> Neisseria meningitidis

<400> 1232

Met Leu Gly Met Ala Arg His Asp Asp Gln Gln Arg Ile Ala Ala Ile
1 5 10 15

Leu Leu Pro Arg Arg Gln Gln Phe Phe Arg Leu Val Phe Thr Pro Ile
20 25 30

Asn Ala Arg Ala Ala Ala His Gly Asn Arg Pro Ala Ser Asp Ala Phe
35 40 45

Phe Lys Leu Pro Arg Gln Arg Phe His Leu Phe Arg Arg Tyr Asp Val
50 55 60

Val Phe Gly Ile Ala Ala His Leu His Gly Cys Arg Ala Gln Phe Arg
65 70 75 80

Gln Pro Arg Arg Ile Arg Leu Cys Leu Arg Gln Thr Pro Arg Gln Arg
85 90 95

Ser Gly Gly Arg Thr Asp Gln Ala Ala Asp Phe Gln Ile Thr Val Gln
100 105 110

Arg Phe Phe Arg Gln Pro Arg Ile Arg Gln Lys Gln Arg His Thr Arg
115 120 125

Ala Pro Ala Phe Pro His Gln Val Gly Pro Asp Phe Gly Phe His Gln
130 135 140

Asn Ala Glu His Arg Ala Val Phe Ala Gln Lys Leu Pro Tyr Pro Arg
145 150 155 160

Phe Phe Val Ile Arg Lys Ile Ala Ala Leu Arg Ile Gly Lys Gln Asn
165 170 175

Leu Arg Gly Phe Pro Pro Arg Arg Gly His Leu Arg His Gln Gln Arg
180 185 190

Arg Ile Gly Lys Thr Pro Pro Gln Leu Ala Tyr Gln Gly Leu Gly Gly
195 200 205

Thr Arg Phe Ser Asp Arg Asn Gly Val Tyr Pro Asn Arg Ala Gly Asn
210 215 220

Gly Ile Arg Ile Arg Leu Ala Glu Thr Leu Val Pro Met Arg Pro Ile
225 230 235 240

Cys Arg Gly Thr Ser Gly Ala Phe Val Gln Ile Thr Pro Tyr Pro Tyr
245 250 255

Arg Arg Lys Gln Pro Gln Tyr Ile Ile Lys Pro Leu Glu His Leu Ser
260 265 270

Ile Ser Cys Lys Thr Asn Ala Val Xaa Thr Val Gln Thr Ala Phe Arg
275 280 285

Gln Arg Asn Gln Ile Ser
290

<210> 1233

<211> 885

<212> DNA

<213> Neisseria meningitidis

<400> 1233

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cggcaggagt ttttccgcct cgtcttcacc ccgataaaacg cgcgtgctgc cgcacacggc 120
aacacctgccc tctccgatgc gtttttcaaa ctgccccgccc agcgtttca tctgttccga 180
cggtcatcagg tcgtatttgg tattgcccga cacctgcacg gatgccgcgc ccaatttcgc 240
caaccgcgcc gcacatccgcct ccgtctgtgc cagacagccc gtcagcgaag cggcggcagg 300
acggatcagg ctgcggactt tcagataacc gtttagcgat ttttccgaca gccgcgcatt 360
cgccaaaaac agcggcacac ccgtgcgcgc gcatttcattc atcagatttg gccagatttc 420
ggtttccatc aaaatgccga acatcgggcgc gtgttgcgc aaaaactgcc gtacccacgt 480
tttttgtca tacggaaatg acggcattt tgcatcagga aacagaactt ggcgcgttgc 540
ccgtcccgatc ggggtcatct gcgtcatcag cagcggcgcga tcgggaaaac gctgccgcaa 600
ctcgcgtatc aaaggttggg cggcacgcgt ttcccgacc gaaacggcgt gtatccaaac 660
cgcgcggta acgggattcg gatacggctt gccgaaacgc tcgccccgat ggcgcgcata 720
tgcaggggca cttccggagc gtttgtccaa ataacgcgtt atccatatcg ggcgaagcag 780
ccacaataca tcataaaagcc attggaacat ctttcttattt cctgcaaaaac aaatgccgtc 840
cgaacggttc ggacggcatt tcggcaacgg aatcaaataat cgtag 885

<210> 1234

<211> 293

<212> PRT

<213> Neisseria meningitidis

<400> 1234

Met Leu Gly Met Ala Arg His Asp Asp Gln Gln Gly Ile Ala Ala Ile
1 5 10 15

Leu Leu Pro Arg Arg Gln Gln Phe Phe Arg Leu Val Phe Thr Pro Ile
20 25 30

Asn Ala Arg Ala Ala Ala His Gly Asn Leu Pro Val Ser Asp Ala Phe
35 40 45

Phe Lys Leu Pro Arg Gln Arg Phe His Leu Phe Arg Arg His Gln Val
50 55 60

Val Phe Gly Ile Ala Ala His Leu His Gly Cys Arg Ala Gln Phe Arg
65 70 75 80

Gln Pro Arg Arg Ile Arg Leu Arg Leu Cys Gln Thr Ala Arg Gln Arg
85 90 95

Ser Gly Gly Arg Thr Asp Gln Ala Ala Asp Phe Gln Ile Thr Val Arg
 100 105 110
 Phe Phe Arg Gln Pro Arg Ile Arg Gln Lys Gln Arg His Thr Arg Ala
 115 120 125
 Pro Ala Phe Leu His Gln Ile Gly Pro Asp Phe Gly Phe His Gln Asn
 130 135 140
 Ala Glu His Arg Ala Val Phe Ala Gln Lys Leu Pro Tyr Pro Arg Phe
 145 150 155 160
 Phe Val Ile Arg Lys Ile Ala Ala Leu Cys Ile Arg Lys Gln Asn Leu
 165 170 175
 Arg Gly Phe Pro Ser Arg Arg Gly His Leu Arg His Gln Gln Arg Arg
 180 185 190
 Ile Gly Lys Thr Leu Pro Gln Leu Ala Tyr Gln Arg Leu Gly Gly Thr
 195 200 205
 Arg Phe Pro Asp Arg Asn Gly Val Tyr Pro Asn Arg Ala Gly Asn Gly
 210 215 220
 Ile Arg Ile Arg Leu Ala Glu Thr Leu Ala Pro Met Arg Pro Ile Cys
 225 230 235 240
 Arg Gly Thr Ser Gly Ala Phe Val Gln Ile Thr Pro Tyr Pro Tyr Arg
 245 250 255
 Arg Lys Gln Pro Gln Tyr Ile Ile Lys Pro Leu Glu His Leu Ser Ile
 260 265 270
 Ser Cys Lys Thr Asn Ala Val Arg Thr Val Arg Thr Ala Phe Arg Gln
 275 280 285
 Arg Asn Gln Ile Ser
 290

<210> 1235
 <211> 1293
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1235
 atggctgtct tcccactttc ggcaaaacat cgaaaaatacg cgctgcgcgc gcttgcgtt 60
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 ccgcagcgcg tggAACAAA actgccgccc ctgtcttggg gccggcaacgg cgttcagacg 180
 gcatatttggg tgcaggaggc ggtgcagccg ggggactcgc tggcggacgt gctggcgcgt 240
 tcgggtatgg cgcgggacga gattgcccga atcacggaaa aatatggcgg cgaagccgat 300
 ttgcggcatt tgcgtgcccga ccagtccgtt catgtttgg tcggcggcga cggcagtgcg 360
 cgcgaagtgc agtttttac cgacgaagac ggcgagcgc aatctggtcgc tttggaaaaaa 420
 aaaggcggca tatggcggcg gtcggcttct gatgcggata tgaaggttt gccgacactg 480
 ctttcggtcg tggtaaaaac gtcggcgcgc ggttcgtgg cgcggcgg agtgccccgtc 540
 gaaatccgcg aatccttaag cgggattttt gccggccgct tcagccttga cggtttgaag 600

gaaggcgatg ccgtgcgcct gctttacgac agcctgtatt tccacggca gcaggtggcg 660
 gcggcgata ttttggcgcc ggaagttgtc aaggcgccaa caacccatca ggcgttcat 720
 taccgttcgg acaaggaagg cggagggggc ggcaattatt acgatgaaga cggcagggtg 780
 ttgcaggaaa aaggcggtt caacatcgag cgcgtgtt atacgcgcat ttcttcgccc 840
 ttcggctacc gtatgcaccc catcctgcac acatggcgcc tgcacacggg catcgattat 900
 gccgcaccgc agggaacgcc ggtcagggtc tccgcccacg gcgtgattac cttaaaggc 960
 cggaaaggcg gatacggcaa cgcgtgtatg atacgccacg ccaacgggtg ggaaacgcgt 1020
 tacgcgcact tgagcgcgtt ttgcaggca caaggcaatg tgcgcggcgg cgaggtcate 1080
 gtgttgtcg gttcgacagg gcgttcgacc gggccgcacc tgcattacga ggcgccatc 1140
 aacgggcagc cgtcaatcc tgtttcggc gcattgcccga caccgcatt gacgcaggcg 1200
 gacaaggcg cgtttgcgc gcagaaacag aaggcgacg cgctgcttc ggcgttgcgc 1260
 ggcataccgg ttaccgtgtc gcaatcgat tga 1293

<210> 1236

<211> 380

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1236

Leu	Ser	Trp	Gly	Gly	Asn	Gly	Val	Gln	Thr	Ala	Tyr	Trp	Val	Gln	Glu
1							5			10				15	

Ala	Val	Gln	Pro	Gly	Asp	Ser	Leu	Ala	Asp	Val	Leu	Ala	Arg	Ser	Gly
							20			25			30		

Met	Ala	Arg	Asp	Glu	Ile	Ala	Arg	Ile	Thr	Glu	Lys	Tyr	Gly	Gly	Glu
					35			40			45				

Ala	Asp	Leu	Arg	His	Leu	Arg	Ala	Asp	Gln	Ser	Val	His	Val	Leu	Val
					50			55			60				

Gly	Gly	Asp	Gly	Ser	Ala	Arg	Glu	Val	Gln	Phe	Phe	Thr	Asp	Glu	Asp
					65			70		75		80			

Gly	Glu	Arg	Asn	Leu	Val	Ala	Leu	Glu	Lys	Lys	Gly	Gly	Ile	Trp	Arg
					85			90			95				

Arg	Ser	Ala	Ser	Asp	Ala	Asp	Met	Lys	Val	Leu	Pro	Thr	Leu	Arg	Ser
					100			105			110				

Val	Val	Val	Lys	Thr	Ser	Ala	Arg	Gly	Ser	Leu	Ala	Arg	Ala	Glu	Val
						115			120			125			

Pro	Val	Glu	Ile	Arg	Glu	Ser	Leu	Ser	Gly	Ile	Phe	Ala	Gly	Arg	Phe
							130			135			140		

Ser	Leu	Asp	Gly	Leu	Lys	Glu	Gly	Asp	Ala	Val	Arg	Leu	Leu	Tyr	Asp
					145			150			155			160	

Ser	Leu	Tyr	Phe	His	Gly	Gln	Gln	Val	Ala	Ala	Gly	Asp	Ile	Leu	Ala
						165			170			175			

Ala	Glu	Val	Val	Lys	Gly	Gly	Thr	Thr	His	Gln	Ala	Phe	Tyr	Tyr	Arg
							180			185			190		

Ser Asp Lys Glu Gly Gly Gly Asn Tyr Tyr Asp Glu Asp Gly

195	200	205
Arg Val Leu Gln Glu Lys Gly Gly Phe Asn Ile Glu Pro Leu Val Tyr		
210	215	220
Thr Arg Ile Ser Ser Pro Phe Gly Tyr Arg Met His Pro Ile Leu His		
225	230	235
240		
Thr Trp Arg Leu His Thr Gly Ile Asp Tyr Ala Ala Pro Gln Gly Thr		
245	250	255
Pro Val Arg Ala Ser Ala Asp Gly Val Ile Thr Phe Lys Gly Arg Lys		
260	265	270
Gly Gly Tyr Gly Asn Ala Val Met Ile Arg His Ala Asn Gly Val Glu		
275	280	285
Thr Leu Tyr Ala His Leu Ser Ala Phe Ser Gln Ala Gln Gly Asn Val		
290	295	300
Arg Gly Gly Glu Val Ile Gly Phe Val Gly Ser Thr Gly Arg Ser Thr		
305	310	315
320		
Gly Pro His Leu His Tyr Glu Ala Arg Ile Asn Gly Gln Pro Val Asn		
325	330	335
Pro Val Ser Val Ala Leu Pro Thr Pro Glu Leu Thr Gln Ala Asp Lys		
340	345	350
Ala Ala Phe Ala Ala Gln Lys Gln Lys Ala Asp Ala Leu Leu Ala Arg		
355	360	365
Leu Arg Gly Ile Pro Val Thr Val Ser Gln Ser Asp		
370	375	380

<210> 1237
<211> 1293
<212> DNA
<213> Neisseria meningitidis

<400> 1237
atggctgtct tcccacttgc ggcaaaacat cggaaaatacg cgctgcgtgc gcttggcgtt 60
tcgattattt tgggtgcggc ggcatacatt gcttcgacag agaggacgga gcgcgtcaga 120
ccgcagcgcg tggAACAAAAA tctgccgcgg ctgtcttggg gcggcagcgg cgttcagacg 180
gcatattggg tgcaggaggg ggtgcagccg ggcgaactcgc tggcggacgt gctggcgcgt 240
tcgggtatgg cgcgggacga gattgccccgaa atcacggaaa aatatgggg cgaaggccat 300
ttgcggcatt tgcgtgccga ccagtcggtt catgtttgg tcggcggcga cggcggcgcg 360
cgcgaagtgc agtttttac cgacgaagac ggcgagcgcgca atctggtcgc tttggaaaag 420
aaaggcggca tatggcggcg gtcggcttct gaggcggata tgaaggttt gccgacgctg 480
cgttcggcgtcg tggtaaaaac gtcggcgcgc gggtcgctgg cgcggggcggaa agtgcccgtc 540
gaaatccgcg aatccctaag cgggatttc gccggccgcgct tcagccttgc cggtttgaag 600
gaaggcgcgtg ccgtgcgcct gatgtacgac agcctgtatt tccacgggcgc gcagggtggcg 660
gcggggcgcata ttttggcggc tgaagtcgtt aaggcggcga caaggcatca ggcgttctat 720
taccgttccgg acaaggaagg cggagggggc ggcaattatt atgatgaaga cggcaagggtg 780
ttgcaggaaa aaggcggcgtt caacatcgag ccgctggtct atacgcgcatt ttcttcgcgc 840
ttcggctacc gtatgcaccc catcctgcac acatggcggc tgcacacggg catcgattat 900

gcccacccgc agggaaacgcc ggtcagggct tccggccacg gcgtgattac ctttaaaggc 960
cggaaggcg gatacggcaa cgccgtatg atacgccacg ccaacggtgt ggaaacgctg 1020
tacgcgcaact tgagcgcgtt ttgcgcaggcg gaaggcaatg tgccgcggcgg cgaggtcatc 1080
ggtttgcgtg ttgcgaccgg gcgttcgacc gggccgcacc tgcattacga ggcgcgcac 1140
aacgggcagc ccgtcaatcc ttgcgcgtc gcattgccga caccggaaatt gacgcaggcg 1200
gacaaggcg ggccgtgcgc gcagaaacag aaggcggacg cgctgcttgc ggcgttgcgc 1260
ggcataccgg ttaccgtgtc gcaatcgat tga 1293

<210> 1238

<211> 430

<212> PRT

<213> Neisseria meningitidis

<400> 1238

Met Ala Val Phe Pro Leu Ser Ala Lys His Arg Lys Tyr Ala Leu Arg
1 5 10 15

Ala Leu Ala Val Ser Ile Ile Leu Val Ser Ala Ala Tyr Ile Ala Ser
20 25 30

Thr Glu Arg Thr Glu Arg Val Arg Pro Gln Arg Val Glu Gln Asn Leu
35 40 45

Pro Pro Leu Ser Trp Gly Gly Ser Gly Val Gln Thr Ala Tyr Trp Val
50 55 60

Gln Glu Ala Val Gln Pro Gly Asp Ser Leu Ala Asp Val Leu Ala Arg
65 70 75 80

Ser Gly Met Ala Arg Asp Glu Ile Ala Arg Ile Thr Glu Lys Tyr Gly
85 90 95

Gly Glu Ala Asp Leu Arg His Leu Arg Ala Asp Gln Ser Val His Val
100 105 110

Leu Val Gly Gly Asp Gly Gly Ala Arg Glu Val Gln Phe Phe Thr Asp
115 120 125

Glu Asp Gly Glu Arg Asn Leu Val Ala Leu Glu Lys Lys Gly Gly Ile
130 135 140

Trp Arg Arg Ser Ala Ser Glu Ala Asp Met Lys Val Leu Pro Thr Leu
145 150 155 160

Arg Ser Val Val Val Lys Thr Ser Ala Arg Gly Ser Leu Ala Arg Ala
165 170 175

Glu Val Pro Val Glu Ile Arg Glu Ser Leu Ser Gly Ile Phe Ala Gly
180 185 190

Arg Phe Ser Leu Asp Gly Leu Lys Glu Gly Asp Ala Val Arg Leu Met
195 200 205

Tyr Asp Ser Leu Tyr Phe His Gly Gln Gln Val Ala Ala Gly Asp Ile
210 215 220

Leu Ala Ala Glu Val Val Lys Gly Gly Thr Arg His Gln Ala Phe Tyr
 225 230 235 240
 Tyr Arg Ser Asp Lys Glu Gly Gly Gly Asn Tyr Tyr Asp Glu
 245 250 255
 Asp Gly Lys Val Leu Gln Glu Lys Gly Gly Phe Asn Ile Glu Pro Leu
 260 265 270
 Val Tyr Thr Arg Ile Ser Ser Pro Phe Gly Tyr Arg Met His Pro Ile
 275 280 285
 Leu His Thr Trp Arg Leu His Thr Gly Ile Asp Tyr Ala Ala Pro Gln
 290 295 300
 Gly Thr Pro Val Arg Ala Ser Ala Asp Gly Val Ile Thr Phe Lys Gly
 305 310 315 320
 Arg Lys Gly Gly Tyr Gly Asn Ala Val Met Ile Arg His Ala Asn Gly
 325 330 335
 Val Glu Thr Leu Tyr Ala His Leu Ser Ala Phe Ser Gln Ala Glu Gly
 340 345 350
 Asn Val Arg Gly Glu Val Ile Gly Phe Val Gly Ser Thr Gly Arg
 355 360 365
 Ser Thr Gly Pro His Leu His Tyr Glu Ala Arg Ile Asn Gly Gln Pro
 370 375 380
 Val Asn Pro Val Ser Val Ala Leu Pro Thr Pro Glu Leu Thr Gln Ala
 385 390 395 400
 Asp Lys Ala Ala Phe Ala Ala Gln Lys Gln Lys Ala Asp Ala Leu Leu
 405 410 415
 Ala Arg Leu Arg Gly Ile Pro Val Thr Val Ser Gln Ser Asp
 420 425 430

<210> 1239
 <211> 1293
 <212> DNA
 <213> Neisseria meningitidis

<400> 1239
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 cccgcagcgcg tggAACAAAA actgccgccc ctgtcttggg gcggcagcgg tgttcagacg 180
 gcatatttggg tgcaggaggc ggtgcagcca ggcgactcgc tggcggacgt gctggcgcgt 240
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 ttgcggcatt tgcgtgcccga ccagtcggtt catgtttgg tcggcggcga cggcggcgcg 360
 cgcgaagtgc agtttttac cgacgaagac ggcgacgcga atctggtcgc tttggaaaaaa 420
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 cgttcggtcg tggtaaaac gtcggcgcgc ggttcgctgg cgcggcgcga agtgccccgtc 540
 gaaattcgcg aatccttaag cgggattttc gccggccgct tcagccttga tggttgaag 600

gaaggcgatg ccgtgcgcct gatttacgac agcctgtatt tccacggca gcaggtggcg 660
 gcgggcgata ttctggcgcc ggaagtcgtt aaggcgca caaggcatca ggcgttctat 720
 taccgttcgg acaaggaagg aggagggggc ggcaattatt acgatgaaga cggcagggtg 780
 ttgcaggaaa aaggcggtt caacatcgag ccactggtct atacgcgcac ttcttcgccc 840
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 ggtttgtcg gttcgaccgg cggttcgacg gggccgcacc tgcattacga ggccgcac 1140
 aatgggcacgc cgcgtcaatcc tggttcggc gcattgcca caccgcatt gacgcaggcg 1200
 gacaaggcg cggttgcgc gcagaaaacag aaggcgacg cgctgcttgc ggcgttgcgc 1260
 ggcataccgg ttaccgtgtc gcaatcgat tga 1293

<210> 1240

<211> 430

<212> PRT

<213> Neisseria meningitidis

<400> 1240

Met	Ala	Val	Phe	Pro	Leu	Ser	Ala	Lys	His	Arg	Lys	Tyr	Ala	Leu	Arg
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Ala	Leu	Ala	Val	Ser	Ile	Ile	Leu	Val	Ser	Ala	Ala	Tyr	Ile	Ala	Ser
					20			25				30			

Thr	Glu	Arg	Thr	Glu	Arg	Val	Arg	Pro	Gln	Arg	Val	Glu	Gln	Lys	Leu
					35			40			45				

Pro	Pro	Leu	Ser	Trp	Gly	Gly	Ser	Gly	Val	Gln	Thr	Ala	Tyr	Trp	Val
					50			55			60				

Gln	Glu	Ala	Val	Gln	Pro	Gly	Asp	Ser	Leu	Ala	Asp	Val	Leu	Ala	Arg
					65			70			75			80	

Ser	Gly	Met	Ala	Arg	Asp	Glu	Ile	Ala	Arg	Ile	Thr	Glu	Lys	Tyr	Gly
					85				90		95				

Gly	Glu	Ala	Asp	Leu	Arg	His	Leu	Arg	Ala	Asp	Gln	Ser	Val	His	Val
					100			105			110				

Leu	Val	Gly	Gly	Asp	Gly	Gly	Ala	Arg	Glu	Val	Gln	Phe	Phe	Thr	Asp
					115			120			125				

Glu	Asp	Gly	Glu	Arg	Asn	Leu	Val	Ala	Leu	Glu	Lys	Lys	Gly	Gly	Ile
					130			135			140				

Trp	Arg	Arg	Ser	Ala	Ser	Glu	Ala	Asp	Met	Lys	Val	Leu	Pro	Thr	Leu
					145			150			155			160	

Arg	Ser	Val	Val	Val	Lys	Thr	Ser	Ala	Arg	Gly	Ser	Leu	Ala	Arg	Ala
					165				170			175			

Glu	Val	Pro	Val	Glu	Ile	Arg	Glu	Ser	Leu	Ser	Gly	Ile	Phe	Ala	Gly
					180			185			190				

Arg Phe Ser Leu Asp Gly Leu Lys Glu Gly Asp Ala Val Arg Leu Ile
195 200 205

Tyr Asp Ser Leu Tyr Phe His Gly Gln Gln Val Ala Ala Gly Asp Ile
210 215 220

Leu Ala Ala Glu Val Val Lys Gly Gly Thr Arg His Gln Ala Phe Tyr
225 230 235 240

Tyr Arg Ser Asp Lys Glu Gly Gly Gly Asn Tyr Tyr Asp Glu
245 250 255

Asp Gly Arg Val Leu Gln Glu Lys Gly Gly Phe Asn Ile Glu Pro Leu
260 265 270

Val Tyr Thr Arg Ile Ser Ser Pro Phe Gly Tyr Arg Met His Pro Ile
275 280 285

Leu His Thr Trp Arg Leu His Thr Gly Ile Asp Tyr Ala Ala Pro Gln
290 295 300

Gly Thr Pro Val Arg Ala Ser Ala Asp Gly Val Ile Thr Phe Lys Gly
305 310 315 320

Arg Lys Gly Gly Tyr Gly Asn Ala Val Met Ile Arg His Ala Asn Gly
325 330 335

Val Glu Thr Leu Tyr Ala His Leu Ser Ala Phe Ser Gln Ala Glu Gly
340 345 350

Asn Val Arg Gly Gly Glu Val Ile Gly Phe Val Gly Ser Thr Gly Arg
355 360 365

Ser Thr Gly Pro His Leu His Tyr Glu Ala Arg Ile Asn Gly Gln Pro
370 375 380

Val Asn Pro Val Ser Val Ala Leu Pro Thr Pro Glu Leu Thr Gln Ala
385 390 395 400

Asp Lys Ala Ala Phe Ala Ala Gln Lys Gln Lys Ala Asp Ala Leu Leu
405 410 415

Ala Arg Leu Arg Gly Ile Pro Val Thr Val Ser Gln Ser Asp
420 425 430

<210> 1241

<211> 984

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1241

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gaaccgcttg ccgcctacgg atgggtggccc agcggagcgg cgttgcaaga aaacgcctac 180
gccctttcag acggcatcaa aacttcctg tccggcgaaa cgccccccac ggctcaagac 240
ggcggttcgg cagatatgcc gcctgaagcc gccgcattccg aagccgcccc gccggccggc 300

ggaacagaat ggaacaagg caccgaagcc gccggcggtcc gcagcggcga caaagtcttt 360
 ttgcggcggag attcgctgat gcaggcggtt gcgccttcg tgcaaaaaag cctgaaacag 420
 caatacggca tcgaatccgc caacctcagc aaacaaaagca cggggctttc ctatccctca 480
 ttcttcgact ggccgaaaac gattgaagaa accttgaaaa aacatcccgaa aatcagcgta 540
 ctcggcgctc tcctcgcccc gaacgacccg tgggatttcc cctgcggcaa acgctacctc 600
 aaattcgctt ccgacgaatg ggcgcaagaa tacctgaaac gcgtcgaccg catccttgaa 660
 gcccacacaca cgcaccgcgt ccaagtcgtc tggctcggca tcccctacat gaaaaaagtc 720
 aagctcgacg gtcatcgac ctacctcgac aaactgcttt cggAACACTT gaaaggcaaa 780
 atcatcctga ttcccaccgc gcaaacactg agcggcggga aaggccgcta caccgattcc 840
 gtcaacgtca acggcaaaccc cgatcgctac cgcagtaagg acggcataaca cttaaccgcc 900
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 caaccatcaa gtacacagcc atga 984

<210> 1242

<211> 327

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1242

Met	Lys	Asn	Phe	Leu	Ser	Leu	Phe	Ala	Ser	Ile	Leu	Met	Ser	Ala	Leu
1				5						10				15	

Ile	Ala	Val	Trp	Phe	Ser	Gln	Asn	Pro	Ile	Asn	Ala	Tyr	Trp	Gln	Gln
									20			25			30

Thr	Tyr	His	Arg	Asn	Ser	Pro	Leu	Glu	Pro	Leu	Ala	Ala	Tyr	Gly	Trp
									35			40			45

Trp	Arg	Ser	Gly	Ala	Ala	Leu	Gln	Glu	Asn	Ala	Tyr	Ala	Leu	Ser	Asp
						50			55			60			

Gly	Ile	Lys	Thr	Phe	Leu	Ser	Gly	Glu	Thr	Pro	Pro	Thr	Ala	Gln	Asp
									65			70			80

Gly	Gly	Ser	Ala	Asp	Met	Pro	Pro	Glu	Ala	Ala	Ala	Ser	Glu	Ala	Ala
									85			90			95

Pro	Pro	Ala	Gly	Gly	Thr	Glu	Trp	Lys	Gln	Gly	Thr	Glu	Ala	Ala	Ala
								100			105			110	

Val	Arg	Ser	Gly	Asp	Lys	Val	Phe	Phe	Ala	Gly	Asp	Ser	Leu	Met	Gln
									115			120			125

Gly	Val	Ala	Pro	Phe	Val	Gln	Lys	Ser	Leu	Lys	Gln	Gln	Tyr	Gly	Ile
									130			135			140

Glu	Ser	Ala	Asn	Leu	Ser	Lys	Gln	Ser	Thr	Gly	Leu	Ser	Tyr	Pro	Ser
									145			150			160

Phe	Phe	Asp	Trp	Pro	Lys	Thr	Ile	Glu	Glu	Thr	Leu	Lys	Lys	His	Pro
										165		170			175

Glu	Ile	Ser	Val	Leu	Ala	Val	Phe	Leu	Gly	Pro	Asn	Asp	Pro	Trp	Asp
									180			185			190

Phe Pro Val Gly Lys Arg Tyr Leu Lys Phe Ala Ser Asp Glu Trp Ala

195	200	205
Gln Glu Tyr Leu Lys Arg Val Asp Arg Ile Leu Glu Ala Ala His Thr		
210	215	220
His Arg Val Gln Val Val Trp Leu Gly Ile Pro Tyr Met Lys Lys Val		
225	230	235
Lys Leu Asp Gly Gln Met Arg Tyr Leu Asp Lys Leu Leu Ser Glu His		
245	250	255
Leu Lys Gly Lys Ile Ile Leu Ile Pro Thr Ala Gln Thr Leu Ser Gly		
260	265	270
Gly Lys Gly Arg Tyr Thr Asp Ser Val Asn Val Asn Gly Lys Pro Val		
275	280	285
Arg Tyr Arg Ser Lys Asp Gly Ile His Phe Thr Ala Glu Gly Gln Lys		
290	295	300
Leu Leu Ala Glu Lys Ile Met Glu Lys Ile Val Phe Glu Pro Ser Thr		
305	310	315
320		
Gln Pro Ser Ser Thr Gln Pro		
325		

<210> 1243

<211> 984

<212> DNA

<213> Neisseria meningitidis

<400> 1243

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gaaccgcttg ccgcctacgg atggggcgcc agcggtgcgg cgttgcaaga aaacgcctac 180
gcccttcag acggcatcaa agccttcctg tccggcgaaa cgccgcccgc ggcctaagac 240
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<210> 1244

<211> 327

<212> PRT

<213> Neisseria meningitidis

<400> 1244

Met Lys Asn Phe Leu Ser Leu Phe Ser Ser Ile Leu Met Ser Ala Leu			
1	5	10	15
Ile Ala Val Trp Phe Ser Gln Asn Pro Ile Asn Ala Tyr Trp Gln Gln			
20	25	30	
Thr Tyr His Arg Asn Ser Pro Leu Glu Pro Leu Ala Ala Tyr Gly Trp			
35	40	45	
Trp Arg Ser Gly Ala Ala Leu Gln Glu Asn Ala Tyr Ala Leu Ser Asp			
50	55	60	
Gly Ile Lys Ala Phe Leu Ser Gly Glu Thr Pro Pro Thr Ala Gln Asp			
65	70	75	80
Gly Gly Ser Ala Asp Met Pro Ser Glu Ala Ala Ala Ser Glu Ala Val			
85	90	95	
Pro Gln Thr Gly Glu Thr Glu Trp Lys Gln Asp Thr Glu Ala Ala Ala			
100	105	110	
Val Arg Ser Gly Asp Lys Val Phe Phe Val Gly Asp Ser Leu Met Gln			
115	120	125	
Gly Val Ala Pro Phe Val Gln Lys Ser Leu Lys Gln Gln Tyr Gly Ile			
130	135	140	
Glu Ser Val Asn Leu Ser Lys Gln Ser Thr Gly Leu Ser Tyr Pro Ser			
145	150	155	160
Phe Phe Asp Trp Pro Lys Thr Ile Glu Glu Thr Leu Gln Lys His Pro			
165	170	175	
Glu Ile Ser Val Leu Ala Val Phe Leu Gly Pro Asn Asp Pro Trp Asp			
180	185	190	
Phe Pro Val Gly Lys Leu Tyr Leu Lys Phe Ala Ser Asp Glu Trp Ala			
195	200	205	
Gln Glu Tyr Leu Lys Arg Val Asp Arg Ile Leu Glu Ala Ala His Thr			
210	215	220	
His Arg Val Gln Val Val Trp Leu Gly Ile Pro Tyr Met Lys Lys Ala			
225	230	235	240
Lys Leu Asp Gly Gln Met Arg Tyr Leu Asp Lys Leu Leu Ser Glu His			
245	250	255	
Leu Lys Gly Lys Ile Ile Leu Ile Pro Thr Thr His Thr Leu Ser Gly			
260	265	270	
Gly Lys Asp Arg Tyr Thr Asp Ser Val Asn Val Asn Gly Lys Pro Val			
275	280	285	
Arg Tyr Arg Ser Lys Asp Gly Ile His Phe Thr Ala Glu Gly Gln Lys			

290

295

300

Leu Leu Ala Ala Lys Ile Met Glu Lys Ile Val Phe Glu Pro Ser Thr
305 310 315 320

Gln Pro Ser Ser Thr Gln Pro
325

<210> 1245

<211> 984

<212> DNA

<213> Neisseria meningitidis

<400> 1245

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gcccttcag acggcatcaa agccttcctg tccggcgaaa cgccgcccggac ggctcaagac 240
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gaaggacaaa aactgctggc ggcaaaaaata atggaaaaaaa tcgttttga accaagtacg 960
caaccatcaa gtacacagcc atga 984

<210> 1246

<211> 327

<212> PRT

<213> Neisseria meningitidis

<400> 1246

Met Lys Asn Phe Leu Ser Leu Phe Ala Ser Ile Leu Met Ser Ala Leu
1 5 10 15

Ile Ala Val Trp Phe Ser Gln Asn Pro Ile Asn Ala Tyr Trp Gln Gln
20 25 30

Thr Tyr His Arg Asn Ser Pro Leu Glu Pro Leu Ala Ala Tyr Gly Trp
35 40 45

Trp Arg Ser Gly Ala Ala Leu Gln Glu Asn Ala Tyr Ala Leu Ser Asp
50 55 60

Gly Ile Lys Ala Phe Leu Ser Gly Glu Thr Pro Pro Thr Ala Gln Asp
65 70 75 80

Gly Gly Ser Ala Asp Met Pro Ser Glu Ala Ala Ala Pro Glu Thr Ala
 85 90 95

 Pro Gln Thr Gly Glu Thr Glu Trp Lys Gln Asn Thr Glu Ala Ala Ala
 100 105 110

 Val Arg Thr Gly Asp Lys Val Phe Phe Ala Gly Asp Ser Leu Met Gln
 115 120 125

 Gly Val Ala Pro Phe Val Gln Lys Ser Leu Lys Gln Gln Tyr Gly Ile
 130 135 140

 Glu Ser Val Asn Leu Ser Lys Gln Ser Thr Gly Leu Ser Tyr Pro Ser
 145 150 155 160

 Phe Phe Asp Trp Pro Lys Thr Ile Glu Glu Thr Leu Lys Lys His Pro
 165 170 175

 Glu Ile Ser Val Leu Ala Val Phe Leu Gly Pro Asn Asp Pro Trp Asp
 180 185 190

 Phe Pro Val Gly Lys Arg Tyr Leu Lys Phe Ala Ser Asp Glu Trp Ala
 195 200 205

 Gln Glu Tyr Leu Lys Arg Val Asp Arg Ile Leu Glu Ala Ala His Thr
 210 215 220

 His Tyr Val Gln Val Val Trp Leu Gly Ile Pro Tyr Met Lys Lys Ala
 225 230 235 240

 Lys Leu Asp Gly Gln Met Arg Tyr Leu Asp Lys Leu Leu Ser Glu Tyr
 245 250 255

 Leu Lys Gly Lys Ile Ile Leu Ile Pro Thr Ala His Thr Leu Ser Gly
 260 265 270

 Gly Lys Asp Arg Tyr Thr Asp Ser Val Asn Val Asn Gly Lys Pro Val
 275 280 285

 Arg Tyr Arg Ser Lys Asp Gly Ile His Phe Thr Ala Glu Gly Gln Lys
 290 295 300

 Leu Leu Ala Ala Lys Ile Met Glu Lys Ile Val Phe Glu Pro Ser Thr
 305 310 315 320

 Gln Pro Ser Ser Thr Gln Pro
 325

<210> 1247
 <211> 1194
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1247
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gatacaaacg ggctgctgac cgactacggc aacgccgccc cctgccttg gataaaaaaa 180
ctccgatccg tcgcacaagg cagcggcgag gccttccgca tcctgcaaat cggcgactcg 240
cataccgccc gcgacttctt taccgacgcc ctgcgcaaaac gcctgaaaaa aacatgggc 300
gacggcgca taggctgggt ttacccgcc aacgtcaaag ggcagcgcat ggccggcgtc 360
cgtcacagcg gcaactggca aagcttaccg agcaggaaca ataccggaga tttcccgctc 420
ggcggcatcc tcgccccaaac cggcagcgcc ggccggcatga ccctgaccgc gtctgacggc 480
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gcggcactgc ccctggccat acagaccgaa atgcccgtggg acatcggttt catcaacatc 660
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<210> 1248

<211> 397

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1248

Met Asn Pro Lys His Phe Ile Ala Phe Ser Ala Leu Phe Ala Ala Thr
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Gln Ala Glu Ala Leu Pro Val Ala Ser Val Ser Pro Asp Thr Val Thr
20 25 30

Val Ser Pro Ser Ala Pro Tyr Thr Asp Thr Asn Gly Leu Leu Thr Asp
35 40 45

Tyr Gly Asn Ala Ala Ala Ser Pro Trp Met Lys Lys Leu Arg Ser Val
50 55 60

Ala Gln Gly Ser Gly Glu Ala Phe Arg Ile Leu Gln Ile Gly Asp Ser
65 70 75 80

His Thr Ala Gly Asp Phe Phe Thr Asp Ala Leu Arg Lys Arg Leu Gln
85 90 95

Lys Thr Trp Gly Asp Gly Gly Ile Gly Trp Val Tyr Pro Ala Asn Val
100 105 110

Lys Gly Gln Arg Met Ala Ala Val Arg His Ser Gly Asn Trp Gln Ser
115 120 125

Phe Thr Ser Arg Asn Asn Thr Gly Asp Phe Pro Leu Gly Gly Ile Leu
130 135 140

Ala Gln Thr Gly Ser Gly Gly Met Thr Leu Thr Ala Ser Asp Gly
145 150 155 160

Lys Thr Gly Lys Gln Arg Val Ser Leu Phe Ala Lys Pro Leu Leu Ala

165

170

175

Glu Gln Thr Leu Thr Val Asn Gly Asn Thr Val Ser Ala Asn Gly Gly
180 185 190

Gly Trp Gln Val Leu Asp Thr Gly Ala Ala Leu Pro Leu Ala Ile Gln
195 200 205

Thr Glu Met Pro Trp Asp Ile Gly Phe Ile Asn Ile Glu Asn Pro Ala
210 215 220

Gly Gly Ile Thr Val Ser Ala Met Gly Ile Asn Gly Ala Gln Leu Thr
225 230 235 240

Gln Trp Ser Lys Trp Arg Ala Asp Arg Met Asn Asp Leu Ala Gln Thr
245 250 255

Gly Ala Asp Leu Val Ile Leu Ser Tyr Gly Thr Asn Glu Ala Phe Asn
260 265 270

Asn Asn Ile Asp Ile Ala Asp Thr Glu Gln Lys Trp Leu Asp Thr Val
275 280 285

Arg Gln Ile Arg Asp Ser Leu Pro Ala Ala Gly Ile Leu Ile Ile Gly
290 295 300

Ala Pro Glu Ser Leu Lys Asn Thr Leu Gly Val Cys Gly Thr Arg Pro
305 310 315 320

Val Leu Leu Thr Glu Val Gln Gln Met Gln Arg Arg Val Ala Arg Gln
325 330 335

Gly Gln Thr Met Phe Trp Ser Trp Gln Asn Ala Met Gly Gly Ile Cys
340 345 350

Ser Met Lys Asn Trp Leu Asn Gln Gly Trp Ala Ala Lys Asp Gly Val
355 360 365

His Phe Ser Ala Gln Gly Tyr Arg Arg Ala Ala Glu Met Leu Ala Asp
370 375 380

Ser Leu Glu Glu Leu Val Arg Ala Ala Ala Ile Arg Gln
385 390 395

<210> 1249

<211> 1194

<212> DNA

<213> Neisseria meningitidis

<400> 1249

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<210> 1250

<211> 397

<212> PRT

<213> Neisseria meningitidis

<400> 1250

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Gln Ala Glu Ala Leu Pro Val Ala Ser Val Ser Leu Asp Thr Val Thr
20 25 30

Val Ser Pro Ser Ala Pro Tyr Thr Asp Thr Asn Gly Leu Leu Thr Asp
35 40 45

Tyr Gly Asn Ala Ser Ala Ser Pro Trp Met Lys Lys Leu Gln Ser Val
50 55 60

Ala Gln Gly Ser Gly Glu Thr Phe Arg Ile Leu Gln Ile Gly Asp Ser
65 70 75 80

His Thr Ala Gly Asp Phe Phe Thr Asp Ser Leu Arg Lys Arg Leu Gln
85 90 95

Lys Thr Trp Gly Asp Gly Gly Ile Gly Trp Val Tyr Pro Ala Asn Val
100 105 110

Lys Gly Gln Arg Met Ala Ala Val Arg His Asn Gly Asn Trp Gln Ser
115 120 125

Leu Thr Ser Arg Asn Asn Thr Gly Asp Phe Pro Leu Gly Gly Ile Leu
130 135 140

Ala His Thr Gly Ser Gly Gly Ser Met Thr Leu Thr Ala Ser Asp Gly
145 150 155 160

Ile Ala Ser Lys Gln Arg Val Ser Leu Phe Ala Lys Pro Leu Leu Ala
165 170 175

Glu Gln Thr Leu Thr Val Asn Gly Asn Thr Val Ser Ala Asn Gly Gly

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195	200	205
Thr Glu Met Pro Trp Asp Ile Gly Phe Ile Asn Ile Glu Asn Pro Ala		
210	215	220
Gly Gly Ile Thr Val Ser Ala Met Gly Ile Asn Gly Ala Gln Leu Thr		
225	230	235
Gln Trp Ser Lys Trp Arg Ala Asp Arg Met Asn Asp Leu Ala Gln Thr		
245	250	255
Gly Ala Asp Leu Val Ile Leu Ser Tyr Gly Thr Asn Glu Ala Phe Asn		
260	265	270
Asn Asn Ile Asp Ile Ala Asp Thr Glu Gln Lys Trp Leu Asp Thr Val		
275	280	285
Arg Gln Ile Arg Asp Ser Leu Pro Ala Ala Gly Ile Leu Ile Ile Gly		
290	295	300
Ala Pro Glu Ser Leu Lys Asn Thr Leu Gly Val Cys Gly Thr Arg Pro		
305	310	315
Val Arg Leu Thr Glu Val Gln Gln Met Gln Arg Arg Val Ala Arg Gln		
325	330	335
Gly Gln Thr Met Phe Trp Ser Trp Gln Asn Ala Met Gly Ile Cys		
340	345	350
Ser Met Lys Asn Trp Leu Asn Gln Gly Trp Ala Ala Lys Asp Gly Val		
355	360	365
His Phe Ser Ala Lys Gly Tyr Arg Arg Ala Ala Glu Met Leu Ala Asp		
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Ser Leu Glu Glu Leu Val Arg Ser Ala Ala Ile Arg Gln		
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<210> 1251

<211> 1194

<212> DNA

<213> Neisseria meningitidis

<400> 1251

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<210> 1252

<211> 397

<212> PRT

<213> Neisseria meningitidis

<400> 1252

Met Asn Pro Lys His Leu Ile Ala Phe Ser Ala Leu Phe Ala Ala Thr
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Gln Ala Glu Ala Leu Pro Val Ala Ser Val Ser Leu Asp Thr Val Thr
20 25 30

Val Ser Pro Ser Ala Pro Tyr Thr Asp Thr Asn Gly Leu Leu Thr Asp
35 40 45

Tyr Gly Asn Ala Ser Ala Ser Pro Trp Met Lys Lys Leu Gln Ser Val
50 55 60

Ala Gln Gly Ser Gly Glu Thr Phe Arg Ile Leu Gln Ile Gly Asp Ser
65 70 75 80

His Thr Ala Gly Asp Phe Phe Thr Asp Ser Leu Arg Lys Arg Leu Gln
85 90 95

Lys Thr Trp Gly Asp Gly Gly Ile Gly Trp Val Tyr Pro Ala Asn Val
100 105 110

Lys Gly Gln Arg Met Ala Ala Val Arg His Asn Gly Asn Trp Gln Ser
115 120 125

Leu Thr Ser Arg Asn Asn Thr Gly Asp Phe Pro Leu Gly Gly Ile Leu
130 135 140

Ala His Thr Gly Ser Gly Gly Ser Met Thr Leu Thr Ala Ser Asp Gly
145 150 155 160

Ile Ala Ser Lys Gln Arg Val Ser Leu Phe Ala Lys Pro Leu Leu Ala
165 170 175

Glu Gln Thr Leu Thr Val Asn Gly Asn Thr Val Ser Ala Asn Gly Gly
180 185 190

Gly Trp Gln Val Leu Asp Thr Gly Ala Ala Leu Pro Leu Thr Ile His
 195 200 205
 Thr Glu Met Pro Trp Asp Ile Gly Phe Ile Asn Ile Glu Asn Pro Ala
 210 215 220
 Gly Gly Ile Thr Val Ser Ala Met Gly Ile Asn Gly Ala Gln Leu Thr
 225 230 235 240
 Gln Trp Ser Lys Trp Arg Ala Asp Arg Met Asn Asp Leu Ala Gln Thr
 245 250 255
 Gly Ala Asp Leu Val Ile Leu Ala Tyr Gly Thr Asn Glu Ala Phe Gly
 260 265 270
 Asp Asn Ile Asp Ile Ala Asp Thr Glu Gln Lys Trp Leu Asp Thr Val
 275 280 285
 Arg Gln Ile Arg Asp Ser Leu Pro Ala Ala Gly Ile Leu Ile Ile Gly
 290 295 300
 Ala Pro Glu Ser Leu Lys Asn Thr Leu Gly Val Cys Gly Thr Arg Pro
 305 310 315 320
 Val Arg Leu Thr Glu Val Gln Gln Met Gln Arg Arg Ile Ala Arg Gln
 325 330 335
 Gly Gln Thr Met Phe Trp Ser Trp Gln Asn Ala Met Gly Gly Val Cys
 340 345 350
 Ser Met Lys Asn Trp Leu Asn His Gly Trp Ala Ala Lys Asp Gly Val
 355 360 365
 His Phe Ser Ala Lys Gly Tyr Gln Arg Ser Ala Glu Met Leu Ala Asp
 370 375 380
 Ser Leu Glu Glu Leu Val Arg Ser Ala Ala Ile Arg Gln
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<210> 1253
 <211> 1602
 <212> DNA
 <213> Neisseria gonorrhoeae

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<210> 1254

<211> 533

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1254

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														30	
							20		25						

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												35			45

Leu	Ile	Ala	Ser	Ala	Val	Gly	Ala	Tyr	Phe	Gly	Leu	Ser	Val	Pro	Asp
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Pro	Arg	Pro	Val	Gly	Ala	Lys	Gly	Arg	Ala	Asp	Asp	Gly	Leu	Ile	His
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Val	Val	Ser	Leu	Leu	Asp	Ala	Asp	Gly	Leu	Ile	Lys	Ile	Leu	Thr	His
												85		95	

Thr	Val	Lys	Asn	Phe	Thr	Gly	Phe	Ala	Pro	Leu	Gly	Thr	Val	Leu	Val
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Ser	Leu	Leu	Gly	Val	Gly	Ile	Ala	Glu	Lys	Ser	Gly	Leu	Ile	Ser	Ala
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Leu	Met	Arg	Leu	Leu	Leu	Thr	Lys	Ser	Pro	Arg	Lys	Leu	Thr	Thr	Phe
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Met	Val	Val	Phe	Thr	Gly	Ile	Leu	Ser	Asn	Thr	Ala	Ser	Glu	Leu	Gly
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Tyr	Val	Val	Leu	Ile	Pro	Leu	Ser	Ala	Val	Ile	Phe	His	Ser	Leu	Gly
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Arg His Pro Leu Ala Gly Leu Ala Ala Ala Phe Ala Gly Val Ser Gly
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Gly Tyr Ser Ala Asn Leu Phe Leu Gly Thr Ile Asp Pro Leu Leu Ala
195 200 205

Gly Ile Thr Gln Gln Ala Ala Gln Ile Ile His Pro Asp Tyr Val Val
210 215 220

Gly Pro Glu Ala Asn Trp Phe Phe Met Ala Ala Ser Thr Phe Val Ile
225 230 235 240

Ala Leu Ile Gly Tyr Phe Val Thr Glu Lys Ile Val Glu Pro Gln Leu
245 250 255

Gly Pro Tyr Gln Ser Asp Leu Ser Gln Glu Glu Lys Asp Ile Arg His
260 265 270

Ser Asn Glu Ile Thr Pro Leu Glu Tyr Lys Gly Leu Ile Trp Ala Gly
275 280 285

Val Val Phe Val Ala Leu Ser Ala Leu Leu Ala Trp Ser Ile Val Pro
290 295 300

Ala Asp Gly Ile Leu Arg His Pro Glu Thr Gly Leu Val Ala Gly Ser
305 310 315 320

Pro Phe Leu Lys Ser Ile Val Val Phe Ile Phe Leu Leu Phe Ala Leu
325 330 335

Pro Gly Ile Val Tyr Gly Arg Ile Thr Arg Ser Leu Arg Gly Glu Arg
340 345 350

Glu Val Val Asn Ala Met Ala Glu Ser Met Ser Thr Leu Gly Leu Tyr
355 360 365

Leu Val Ile Ile Phe Phe Ala Ala Gln Phe Val Ala Phe Phe Asn Trp
370 375 380

Thr Asn Ile Gly Gln Tyr Ile Ala Val Lys Gly Ala Val Phe Leu Lys
385 390 395 400

Glu Val Gly Leu Gly Gly Ser Val Leu Phe Ile Gly Phe Ile Leu Ile
405 410 415

Cys Ala Phe Ile Asn Leu Met Ile Gly Ser Ala Ser Ala Gln Trp Ala
420 425 430

Val Thr Ala Pro Ile Phe Val Pro Met Leu Met Leu Ala Gly Tyr Ala
435 440 445

Pro Gln Val Ile Gln Ala Ala Tyr Arg Ile Gly Asp Ser Val Thr Asn
450 455 460

Ile Ile Thr Pro Met Met Ser Tyr Phe Gly Leu Ile Met Ala Thr Val
465 470 475 480

Ile Lys Tyr Lys Lys Asp Ala Gly Val Gly Thr Leu Ile Ser Met Met
485 490 495

Leu Pro Tyr Ser Ala Phe Phe Leu Ile Ala Trp Ile Ala Leu Phe Cys
500 505 510

Ile Trp Val Phe Val Leu Gly Leu Pro Val Gly Pro Gly Thr Pro Thr
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Phe Tyr Pro Val Pro
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<210> 1255

<211> 1581

<212> DNA

<213> Neisseria meningitidis

<400> 1255

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<210> 1256

<211> 526

<212> PRT

<213> Neisseria meningitidis

<400> 1256

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Met Leu Pro His Pro Val Thr Leu Phe Ile Ile Phe Ile Val Leu Leu
35 40 45

Leu Ile Ala Ser Ala Val Gly Ala Tyr Phe Gly Leu Ser Val Pro Asp
50 55 60

Pro Arg Pro Val Gly Ala Lys Gly Arg Ala Asp Asp Gly Leu Ile Tyr
65 70 75 80

Ile Val Ser Leu Leu Asn Ala Asp Gly Phe Ile Lys Ile Leu Thr His
85 90 95

Thr Val Lys Asn Phe Thr Gly Phe Ala Pro Leu Gly Thr Val Leu Val
100 105 110

Ser Leu Leu Gly Val Gly Ile Ala Glu Lys Ser Gly Leu Ile Ser Ala
115 120 125

Leu Met Arg Leu Leu Leu Thr Lys Ser Pro Arg Lys Leu Thr Thr Phe
130 135 140

Met Val Val Phe Thr Gly Ile Leu Ser Asn Thr Ala Ser Glu Leu Gly
145 150 155 160

Tyr Val Val Leu Ile Pro Leu Ser Ala Ile Ile Phe His Ser Leu Gly
165 170 175

Arg His Pro Leu Ala Gly Leu Ala Ala Ala Phe Ala Gly Val Ser Gly
180 185 190

Gly Tyr Ser Ala Asn Leu Phe Leu Ser Thr Ile Asp Pro Leu Leu Ala
195 200 205

Cys Ile Thr His Gln Ala Ala Val Val Gly Pro Glu Ala Asn Trp Phe
210 215 220

Phe Met Val Ala Ser Thr Phe Val Ile Ala Leu Ile Gly Tyr Phe Val
225 230 235 240

Thr Glu Lys Ile Val Glu Pro Gln Leu Gly Pro Tyr Gln Ser Asp Leu
245 250 255

Ser Gln Glu Glu Lys Asp Ile Arg His Ser Asn Glu Ile Thr Pro Leu
260 265 270

Glu Tyr Lys Gly Leu Ile Trp Ala Gly Val Val Phe Val Ala Leu Ser
275 280 285

Ala Leu Leu Ala Trp Ser Ile Val Pro Ala Asp Gly Ile Leu Arg His
290 295 300

Pro Glu Thr Gly Leu Val Ser Gly Ser Pro Phe Leu Lys Ser Ile Val
305 310 315 320

Val Phe Ile Phe Leu Leu Phe Ala Leu Xaa Gly Xaa Val Tyr Gly Arg
 325 330 335
 Val Thr Arg Ser Leu Arg Gly Glu Gln Glu Val Val Asn Ala Met Ala
 340 345 350
 Glu Ser Met Ser Thr Leu Xaa Leu Xaa Leu Xaa Ile Phe Phe Ala
 355 360 365
 Ala Gln Phe Val Ala Phe Phe Asn Trp Thr Asn Ile Gly Gln Tyr Ile
 370 375 380
 Ala Val Lys Gly Ala Thr Phe Leu Lys Glu Val Gly Leu Gly Gly Ser
 385 390 395 400
 Val Leu Phe Ile Gly Phe Ile Leu Ile Cys Ala Phe Ile Asn Leu Met
 405 410 415
 Ile Gly Ser Ala Ser Ala Gln Trp Ala Val Thr Ala Pro Ile Phe Val
 420 425 430
 Pro Met Leu Met Leu Ala Gly Tyr Ala Pro Glu Val Ile Gln Ala Ala
 435 440 445
 Tyr Arg Ile Gly Asp Ser Val Thr Asn Ile Ile Thr Pro Met Met Ser
 450 455 460
 Tyr Phe Gly Leu Ile Met Ala Thr Val Ile Lys Tyr Lys Lys Asp Ala
 465 470 475 480
 Gly Val Gly Thr Leu Ile Ser Met Met Leu Pro Tyr Ser Ala Phe Phe
 485 490 495
 Leu Ile Ala Trp Ile Ala Leu Phe Cys Ile Trp Val Phe Val Leu Gly
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 Leu Pro Val Gly Pro Gly Ala Pro Thr Phe Tyr Pro Ala Pro
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<210> 1257
 <211> 1602
 <212> DNA
 <213> Neisseria meningitidis

<400> 1257
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<210> 1258

<211> 533

<212> PRT

<213> Neisseria meningitidis

<400> 1258

Met His Ser Ile Tyr Phe Phe Lys Lys Gln Met Ser Gln Thr Asp
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Thr Gln Arg Asp Gly Arg Phe Leu Arg Thr Val Glu Trp Leu Gly Asn
20 25 30

Met Leu Pro His Pro Val Thr Leu Phe Ile Ile Phe Ile Val Leu Leu
35 40 45

Leu Ile Ala Ser Ala Ala Gly Ala Tyr Phe Gly Leu Ser Val Pro Asp
50 55 60

Pro Arg Pro Val Gly Ala Lys Gly Arg Ala Asp Asp Gly Leu Ile His
65 70 75 80

Val Val Ser Leu Leu Asp Ala Asp Gly Leu Ile Lys Ile Leu Thr His
85 90 95

Thr Val Lys Asn Phe Thr Gly Phe Ala Pro Leu Gly Thr Val Leu Val
100 105 110

Ser Leu Leu Gly Val Gly Ile Ala Glu Lys Ser Gly Leu Ile Ser Ala
115 120 125

Leu Met Arg Leu Leu Leu Thr Lys Ser Pro Arg Lys Leu Thr Thr Phe
130 135 140

Met Val Val Phe Thr Gly Ile Leu Ser Asn Thr Ala Ser Glu Leu Gly
145 150 155 160

Tyr Val Val Leu Ile Pro Leu Ser Ala Ile Ile Phe His Ser Leu Gly

165 170 175

Arg His Pro Leu Ala Gly Leu Ala Ala Ala Phe Ala Gly Val Ser Gly
180 185 190

Gly Tyr Ser Ala Asn Leu Phe Leu Gly Thr Ile Asp Pro Leu Leu Ala
195 200 205

Gly Ile Thr Gln Gln Ala Ala Gln Ile Ile His Pro Asp Tyr Val Val
210 215 220

Gly Pro Glu Ala Asn Trp Phe Phe Met Val Ala Ser Thr Phe Val Ile
225 230 235 240

Ala Leu Ile Gly Tyr Phe Val Thr Glu Lys Ile Val Glu Pro Gln Leu
245 250 255

Gly Pro Tyr Gln Ser Asp Leu Ser Gln Glu Glu Lys Asp Ile Arg His
260 265 270

Ser Asn Glu Ile Thr Pro Leu Glu Tyr Lys Gly Leu Ile Trp Ala Gly
275 280 285

Val Val Phe Val Ala Leu Ser Ala Leu Leu Ala Trp Ser Ile Val Pro
290 295 300

Ala Asp Gly Ile Leu Arg His Pro Glu Thr Gly Leu Val Ser Gly Ser
305 310 315 320

Pro Phe Leu Lys Ser Ile Val Val Phe Ile Phe Leu Leu Phe Ala Leu
325 330 335

Pro Gly Ile Val Tyr Gly Arg Val Thr Arg Ser Leu Arg Gly Glu Gln
340 345 350

Glu Val Val Asn Ala Met Ala Glu Ser Met Ser Thr Leu Gly Leu Tyr
355 360 365

Leu Val Ile Ile Phe Phe Ala Ala Gln Phe Val Ala Phe Phe Asn Trp
370 375 380

Thr Asn Ile Gly Gln Tyr Ile Ala Val Lys Gly Ala Thr Phe Leu Lys
385 390 395 400

Glu Val Gly Leu Gly Gly Ser Val Leu Phe Ile Gly Phe Ile Leu Ile
405 410 415

Cys Ala Phe Ile Asn Leu Met Ile Gly Ser Ala Ser Ala Gln Trp Ala
420 425 430

Val Thr Ala Pro Ile Phe Val Pro Met Leu Met Leu Ala Gly Tyr Ala
435 440 445

Pro Glu Val Ile Gln Ala Ala Tyr Arg Ile Gly Asp Ser Val Thr Asn
450 455 460

Ile Ile Thr Pro Met Met Ser Tyr Phe Gly Leu Ile Met Ala Thr Val

465

470

475

480

Ile Lys Tyr Lys Lys Asp Ala Gly Val Gly Thr Leu Ile Ser Met Met
485 490 495

Leu Pro Tyr Ser Ala Phe Phe Leu Ile Ala Trp Ile Ala Leu Phe Cys
500 505 510

Ile Trp Val Phe Val Leu Gly Leu Pro Val Gly Pro Gly Ala Pro Thr
515 520 525

Phe Tyr Pro Ala Pro
530

<210> 1259

<211> 822

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1259

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agcaatcaca aggttttga aattgccatc cagctcggtg cgggtttggc ggttagtgtt 180
gaataccggc agcgtttcag caatgtgttgc catggcggtgg gaaaagaccg gaaaggcaac 240
cgtttcgtcc tcaatcttgc cattgctttt atacctgccc ccgtgatggg gctgttgttc 300
gacaaaacaaa tcaaagagta tctgttaac cccttgagtgt ttgcagtcat gctgggtttg 360
ggcggttttt ttattttgtg ggtggagaaa cgccaaagcc gagcagagcc taaaattgcc 420
gatgttgatg cattgcgtcc gattgatgcg ttgatgatcg gtgttgccca agtgttgca 480
ctgggtccgg gtacgtcccg ttccggcagt acggttatgg gcgggatgot ttgggaatc 540
gagcggaaaaa cggcaacggc gtttcatatt ttcttgcccg ttccgatgat ggttgccagca 600
acggcttatg atgtcctgaa acattaccga ttttccaccc tgcattgatgt cggtttgatt 660
ttgatagactt ttattgcgc ttgttgcgtt gggttggtag cggttaaagc actgctgaag 720
tttgggttcca agaaaaacta tatccggtt gcctattacc gcattgtttt cggcattgtc 780
atcaataatat tgtgttgatc gggctggata agttggaaat ga 822

<210> 1260

<211> 273

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1260

Met Asp Phe Leu Ile Val Leu Lys Ala Leu Met Met Gly Leu Val Glu
1 5 10 15

Gly Phe Thr Glu Phe Leu Pro Ile Ser Ser Thr Gly His Leu Ile Val
20 25 30

Phe Gly Asn Leu Ile Gly Phe His Ser Asn His Lys Val Phe Glu Ile
35 40 45

Ala Ile Gln Leu Gly Ala Val Leu Ala Val Val Phe Glu Tyr Arg Gln
50 55 60

Arg Phe Ser Asn Val Leu His Gly Val Gly Lys Asp Arg Lys Ala Asn

65	70	75	80
Arg Phe Val Leu Asn Leu Ala Ile Ala Phe Ile Pro Ala Ala Val Met			
85	90	95	
Gly Leu Leu Phe Asp Lys Gln Ile Lys Glu Tyr Leu Phe Asn Pro Leu			
100	105	110	
Ser Val Ala Val Met Leu Val Leu Gly Gly Phe Phe Ile Leu Trp Val			
115	120	125	
Glu Lys Arg Gln Ser Arg Ala Glu Pro Lys Ile Ala Asp Val Asp Ala			
130	135	140	
Leu Arg Pro Ile Asp Ala Leu Met Ile Gly Val Ala Gln Val Phe Ala			
145	150	155	160
Leu Val Pro Gly Thr Ser Arg Ser Gly Ser Thr Val Met Gly Gly Met			
165	170	175	
Leu Trp Gly Ile Glu Arg Lys Thr Ala Thr Glu Phe Ser Phe Phe Leu			
180	185	190	
Ala Val Pro Met Met Val Ala Ala Thr Ala Tyr Asp Val Leu Lys His			
195	200	205	
Tyr Arg Phe Phe Thr Leu His Asp Val Gly Leu Ile Leu Ile Gly Phe			
210	215	220	
Ile Ala Ala Phe Val Ser Gly Leu Val Ala Val Lys Ala Leu Leu Lys			
225	230	235	240
Phe Val Ser Lys Lys Asn Tyr Ile Pro Phe Ala Tyr Tyr Arg Ile Val			
245	250	255	
Phe Gly Ile Val Ile Ile Leu Trp Leu Ser Gly Trp Ile Ser Trp			
260	265	270	

Glu

<210> 1261
<211> 734
<212> DNA
<213> Neisseria meningitidis

<400> 1261
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agcaatcaca aggttttga aattgccatc cagctcggtg cagtttggc ggtagtgttt 180
gaataccggc aacgtttcag caatgtgtt cacggcttgg gaaaagaccg gaaagccaac 240
cgcttcgtcc ttaatcttgc cattgcttt atacctgccc ccgtgatggg gctgttgc 300
ggcawacaaa tcaaagagya tctgttaac cccttgagtg ttgcagtcat gctggattyg 360
grcgggtttt ytattttgtg ggtggagaaa cgccaaagcc gagcagagcc taaaattgcc 420
gatgttgcattgcgtcc gattgatgcc ttgatgatcg gcgttgccta agtgttgca 480
ctggttccgg gtacgtcccc ttcggggcagt acgattatgg gcgggatgct ttggggcattc 540

gaacggaaaa ctgcgacaga attctcggtt ttcttggctg tgccgatgat ggttggcga 600
acggcttatg atgtcctgaa acattaccga ttttcaccc tgcatgatgt cggttgatt 660

ctgataggct ttattgctgc ctttggttca ggcttggtag cggtaaaagc gttgctgagg 720
tttggttcggtt gtac 734

<210> 1262

<211> 244

<212> PRT

<213> Neisseria meningitidis

<400> 1262

Met Asp Phe Leu Ile Val Leu Lys Ala Leu Met Met Gly Leu Val Glu
1 5 10 15

Gly Phe Thr Glu Phe Leu Pro Ile Ser Ser Thr Gly His Leu Ile Val
20 25 30

Phe Gly Asn Leu Ile Gly Phe His Ser Asn His Lys Val Phe Glu Ile
35 40 45

Ala Ile Gln Leu Gly Ala Val Leu Ala Val Val Phe Glu Tyr Arg Gln
50 55 60

Arg Phe Ser Asn Val Leu His Gly Leu Gly Lys Asp Arg Lys Ala Asn
65 70 75 80

Arg Phe Val Leu Asn Leu Ala Ile Ala Phe Ile Pro Ala Ala Val Met
85 90 95

Gly Leu Leu Phe Gly Xaa Gln Ile Lys Glu Xaa Leu Phe Asn Pro Leu
100 105 110

Ser Val Ala Val Met Leu Val Leu Xaa Gly Phe Xaa Ile Leu Trp Val
115 120 125

Glu Lys Arg Gln Ser Arg Ala Glu Pro Lys Ile Ala Asp Val Asp Ala
130 135 140

Leu Arg Pro Ile Asp Ala Leu Met Ile Gly Val Ala Gln Val Phe Ala
145 150 155 160

Leu Val Pro Gly Thr Ser Arg Ser Gly Ser Thr Ile Met Gly Gly Met
165 170 175

Leu Trp Gly Ile Glu Arg Lys Thr Ala Thr Glu Phe Ser Phe Phe Leu
180 185 190

Ala Val Pro Met Met Val Ala Ala Thr Ala Tyr Asp Val Leu Lys His
195 200 205

Tyr Arg Phe Phe Thr Leu His Asp Val Gly Leu Ile Leu Ile Gly Phe
210 215 220

Ile Ala Ala Phe Val Ser Gly Leu Val Ala Val Lys Ala Leu Leu Arg
225 230 235 240

Phe Val Ser Gly

210 1263

<211> 822

<212> DNA

<213> *Neisseria meningitidis*

<400> 1263

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agcaatcaca	aggaaaaata	aattaccatc	cagctcggtg	cggttttggc	ggtagtggtt	180
gaataccggc	agcgtttcag	caatgtgttgc	catggcgtgg	gaaaagaccg	gaaagccaa	240
cgtttcgccc	ttaatcttgc	cattgcgttt	atacctgccc	ccgtgatggg	gtgttgttgc	300
ggcaaacaaa	tcaaaagact	tctgttaac	cccttgagt	ttgcagtcat	gtcggttttg	360
ggcggttttt	ttatttgtg	ggtggagaaa	cgc当地	gagcagagcc	taaaattgtc	420
gatgttgcgt	cattgcgtcc	gattgtatcg	ttatgtatcg	gcgttgccta	agtgtttgca	480
ctgggttccag	gtacgtcccc	tccggcagt	accattatgg	gcgggatgtct	ttggggaaatc	540
gagcggaaaa	cggcaacgg	gttttcattt	ttcttggccg	ttccgatgtat	ggttgcagca	600
acggcgttatg	atgtcctgaa	gcattaccgg	tttttcaccc	tgc当地	cggttttgatt	660
ttgatttggt	ttgttgcgtc	ctttgttca	ggcttggtgg	cggtaaaagc	gtgtgttgcgg	720
tttgggttcca	agaaaaaatta	tattcccttt	gcctattacc	gcattgtttt	tggatttgcc	780
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<210> 1264

273

<212> PRT

<213> Neisseria meningitidis

<400> 1264

Met Asp Phe Leu Ile Val Leu Lys Ala Leu Met Met Gly Leu Val Glu

1

5

10

15

Gly Phe Thr Glu Phe Leu Pro Ile Ser Ser Thr Gly His Leu Ile Val
20 25 30

Phe Gly Asn Leu Ile Asp Phe His Ser Asn His Lys Val Phe Glu Ile
35 40 45

Thr Ile Gln Leu Gly Ala Val Leu Ala Val Val Phe Glu Tyr Arg Gln
50 55 60

Arg Phe Ser Asn Val Leu His Gly Val Gly Lys Asp Arg Lys Ala Asn
65 70 75 80

Arg Phe Val Leu Asn Leu Ala Ile Ala Phe Ile Pro Ala Ala Val Met
85 90 95

Gly Leu Leu Phe Gly Lys Gln Ile Lys Glu Tyr Leu Phe Asn Pro Leu
 100 105 110

Ser Val Ala Val Met Leu Val Leu Gly Gly Phe Phe Ile Leu Trp Val
115 120 125

Glu Lys Arg Gln Ser Arg Ala Glu Pro Lys Ile Val Asp Val Asp Ala
 130 135 140
 Leu Arg Pro Ile Asp Ala Leu Met Ile Gly Val Ala Gln Val Phe Ala
 145 150 155 160
 Leu Val Pro Gly Thr Ser Arg Ser Gly Ser Thr Ile Met Gly Gly Met
 165 170 175
 Leu Trp Gly Ile Glu Arg Lys Thr Ala Thr Glu Phe Ser Phe Phe Leu
 180 185 190
 Ala Val Pro Met Met Val Ala Ala Thr Ala Tyr Asp Val Leu Lys His
 195 200 205
 Tyr Arg Phe Phe Thr Leu His Asp Val Gly Leu Ile Leu Ile Gly Phe
 210 215 220
 Val Ala Ala Phe Val Ser Gly Leu Val Ala Val Lys Ala Leu Leu Arg
 225 230 235 240
 Phe Val Ser Lys Lys Asn Tyr Ile Pro Phe Ala Tyr Tyr Arg Ile Val
 245 250 255
 Phe Gly Ile Ala Ile Ile Leu Trp Leu Ser Gly Trp Ile Ser Trp
 260 265 270

Glu

<210> 1265
 <211> 804
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1265
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 gcgttcaaaa tccccggctcc gtcgaagcag cctgcagaaaa cggaaatccct gaaactgaaa 180
 aaccagccta aggaagacat ccaacctgaa ccggccgatc aaaacgcctt gtccgaaccg 240
 gatgttgcga aagaggcaga gcagtccgat gcggaaaaag ctgcccacaa gcagcccg 300
 gccgacaaaag ccgacgaggat tgaagaaaaag gcggggcggc cggAACGGGA agagccggac 360
 ggcacaggcag tgcgcagaa agcaactgact gaagagcgtg aacaaccgtt cagggaaaaaa 420
 ggcgcagaaga aagatgccga aacggttaaa aaaaaagcgg taaaaccgtc taaagaaaca 480
 gagaaaaaaag cttcaaaaaga agagaaaaaag gcggccaaaag aaaaagggtgc acccaaaccg 540
 acccccggaaac aaatcctcaa cagccgcagt atcgaaaaaag cgcgtgtgc cgctgcca 600
 gaagtgcaga aaatgaaaaa ctttgggcaa ggcggaaagcc aacgcattat ctgcaaatgg 660
 ggcgcgtatgc cgaaccccg agcgcggaaag ggcagcgtgc caaaactggca atcttggca 720
 tatcttccga agtggtcggc tatcaggcgg gacataaaac gctttaccgc gtgcaagcg 780
 gcaatatgtc cgccgatgca gtga 804

<210> 1266
 <211> 267
 <212> PRT

<213> Neisseria gonorrhoeae

<400> 1266

Met Phe Met Asn Lys Phe Ser Gln Ser Gly Lys Gly Leu Ser Gly Phe
1 5 10 15

Phe Phe Gly Leu Ile Leu Ala Thr Val Ile Ile Ala Gly Ile Leu Leu
20 25 30

Tyr Leu Asn Gln Gly Gly Gln Asn Ala Phe Lys Ile Pro Ala Pro Ser
35 40 45

Lys Gln Pro Ala Glu Thr Glu Ile Leu Lys Leu Lys Asn Gln Pro Lys
50 55 60

Glu Asp Ile Gln Pro Glu Pro Ala Asp Gln Asn Ala Leu Ser Glu Pro
65 70 75 80

Asp Val Ala Lys Glu Ala Glu Gln Ser Asp Ala Glu Lys Ala Ala Asp
85 90 95

Lys Gln Pro Val Ala Asp Lys Ala Asp Glu Val Glu Glu Lys Ala Gly
100 105 110

Glu Pro Glu Arg Glu Glu Pro Asp Gly Gln Ala Val Arg Lys Lys Ala
115 120 125

Leu Thr Glu Glu Arg Glu Gln Thr Val Arg Glu Lys Ala Gln Lys Lys
130 135 140

Asp Ala Glu Thr Val Lys Lys Ala Val Lys Pro Ser Lys Glu Thr
145 150 155 160

Glu Lys Lys Ala Ser Lys Glu Glu Lys Lys Ala Ala Lys Glu Lys Val
165 170 175

Ala Pro Lys Pro Thr Pro Glu Gln Ile Leu Asn Ser Arg Ser Ile Glu
180 185 190

Lys Ala Arg Ser Ala Ala Ala Lys Glu Val Gln Lys Met Lys Asn Phe
195 200 205

Gly Gln Gly Gly Ser Gln Arg Ile Ile Cys Lys Trp Ala Arg Met Pro
210 215 220

Asn Pro Gly Ala Arg Lys Gly Ser Val Pro Asn Trp Gln Ser Trp Ala
225 230 235 240

Tyr Leu Pro Lys Trp Ser Ala Ile Arg Arg Asp Ile Lys Arg Phe Thr
245 250 255

Ala Cys Lys Ala Ala Ile Cys Pro Pro Met Arg
260 265

<210> 1267

<211> 759

<212> DNA

<213> Neisseria meningitidis

<400> 1267

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aaccagagcg gtcaaaaatgc gttcaaaatc ccggcttcgt cgaaggcagcc tgcagaaacg 120
gaaatcctga aaccgmawaa ccagcytaag gaagacatcc aacctgawcc ggccgatcaa 180
aacgccttgt ccgaaccgga tgctgcgaca gaggcagagc agtcggatgc ggaaaaawgct 240
gccgacaacg agcccggtgc cgataaaagcc gacgagggtt aagaaaaaggc gggcgagccg 300
gaacgggaag agccggacgg acaggcagtg cgtaagaaaag cgctgacgga agagcgtgaa 360
caaaccgtca gggaaaaaagc gcagaagaaa gatgccgaaa cggtaaaaaw acaagcggta 420
aaaccgtcta aagaaacaga gaaaaaaagct tcaaaaagaag agaaaaaaggc ggcgaaggaa 480
aaagttgcac ccaaaccacac cccggAACAA atcctcaaca gcggcagcat cgaaaaaagcg 540
cgcagtggcg ccgcCAAAGA agtgcagaaa atgaaaaacgc cgacaaggcg gaagcaacgc 600
attatctgca aatgggcgcg tatgccgacc gtcagagcgc ggaagggcag cgtgccaac 660
tggcaatctt gggcatatct tccaagggtt tcgggttatca ggcgggacat aaaacgctt 720
accgggtgca aagcggcaat atgtctgccc atgcgggtga 759

<210> 1268

<211> 252

<212> PRT

<213> Neisseria meningitidis

<400> 1268

Gly Leu Phe Phe Gly Leu Ile Leu Ala Thr Val Ile Ile Ala Gly Ile
1 5 10 15

Leu Phe Tyr Leu Asn Gln Ser Gly Gln Asn Ala Phe Lys Ile Pro Ala
20 25 30

Ser Ser Lys Gln Pro Ala Glu Thr Glu Ile Leu Lys Pro Xaa Asn Gln
35 40 45

Xaa Lys Glu Asp Ile Gln Pro Xaa Pro Ala Asp Gln Asn Ala Leu Ser
50 55 60

Glu Pro Asp Ala Ala Thr Glu Ala Glu Gln Ser Asp Ala Glu Xaa Ala
65 70 75 80

Ala Asp Lys Gln Pro Val Ala Asp Lys Ala Asp Glu Val Glu Glu Lys
85 90 95

Ala Gly Glu Pro Glu Arg Glu Glu Pro Asp Gly Gln Ala Val Arg Lys
100 105 110

Lys Ala Leu Thr Glu Glu Arg Glu Gln Thr Val Arg Glu Lys Ala Gln
115 120 125

Lys Lys Asp Ala Glu Thr Val Lys Xaa Gln Ala Val Lys Pro Ser Lys
130 135 140

Glu Thr Glu Lys Lys Ala Ser Lys Glu Glu Lys Lys Ala Ala Lys Glu
145 150 155 160

Lys Val Ala Pro Lys Pro Thr Pro Glu Gln Ile Leu Asn Ser Gly Ser
165 170 175

Ile Glu Lys Ala Arg Ser Ala Ala Lys Glu Val Gln Lys Met Lys
180 185 190

Thr Pro Thr Arg Arg Lys Gln Arg Ile Ile Cys Lys Trp Ala Arg Met
195 200 205

Pro Thr Val Arg Ala Arg Lys Gly Ser Val Pro Asn Trp Gln Ser Trp
210 215 220

Ala Tyr Leu Pro Arg Trp Ser Val Ile Arg Arg Asp Ile Lys Arg Phe
225 230 235 240

Thr Gly Cys Lys Ala Ala Ile Cys Leu Pro Met Arg
245 250

<210> 1269

<211> 801

<212> DNA

<213> Neisseria meningitidis

<400> 1269

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gcgttcaaaa tccccgttcc gtcgaagcag cctgcagaaa cggaaatccct gaaaccgaaa 180
aaccacgcta aggaagacat ccaacctgaa ccggccgatc aaaacgcctt gtccgaaccg 240
gatgctgcga aagaggcaga gcagtcggat gcggaaaaag ctgcccaca gcagcccg 300
gccgacaagcc cgcacgaggt tgaggaaaag gcggacgagc cggagcggga aaagtccggac 360
ggacaggcag tgcgcaagaa agcaactgacg gaagagcgtg aacaaaccgt cggggaaaaaa 420
gcgcagaaga aagatgccga acggtaaaa aaacaagcgg taaaaccatc taaagaaaaca 480
gagaaaaaaag cttcaaaaaga agagaaaaaag gcggagaagg aaaaagttgc acccaaaccg 540
accccggaac aaatcctcaa cagcggcagc atcggaaaag cgccgactgc cgctgcca 600
gaagtgcaga aaatgaaaac gccgacaagg cggaaagcaac gcattatctg caaatggcgc 660
cgtatgccga ccgcggagc gcggaaaggc agcgtccaa actggcaatc ttggcatat 720
cttccaaggt ggtcggttat caggcgggac ataaaacgct ttaccgggtg caaagcggca 780
atatgtctgc cgtgcggta 801

<210> 1270

<211> 266

<212> PRT

<213> Neisseria meningitidis

<400> 1270

Met Phe Met Asn Lys Phe Ser Gln Ser Gly Lys Gly Leu Ser Gly Phe
1 5 10 15

Phe Phe Gly Leu Ile Leu Ala Thr Val Ile Ile Ala Gly Ile Leu Phe
20 25 30

Tyr Leu Asn Gln Ser Gly Gln Asn Ala Phe Lys Ile Pro Val Pro Ser
35 40 45

Lys Gln Pro Ala Glu Thr Glu Ile Leu Lys Pro Lys Asn Gln Pro Lys
50 55 60

Glu	Asp	Ile	Gln	Pro	Glu	Pro	Ala	Asp	Gln	Asn	Ala	Leu	Ser	Glu	Pro
65				70					75					80	
Asp	Ala	Ala	Lys	Glu	Ala	Glu	Gln	Ser	Asp	Ala	Glu	Lys	Ala	Ala	Asp
	85					90						95			
Lys	Gln	Pro	Val	Ala	Asp	Lys	Ala	Asp	Glu	Val	Glu	Glu	Lys	Ala	Asp
		100				105						110			
Glu	Pro	Glu	Arg	Glu	Lys	Ser	Asp	Gly	Gln	Ala	Val	Arg	Lys	Lys	Ala
	115				120						125				
Leu	Thr	Glu	Glu	Arg	Glu	Gln	Thr	Val	Gly	Glu	Lys	Ala	Gln	Lys	Lys
	130				135					140					
Asp	Ala	Glu	Thr	Val	Lys	Lys	Gln	Ala	Val	Lys	Pro	Ser	Lys	Glu	Thr
	145				150				155			160			
Glu	Lys	Lys	Ala	Ser	Lys	Glu	Glu	Lys	Lys	Ala	Glu	Lys	Glu	Lys	Val
		165				170					175				
Ala	Pro	Lys	Pro	Thr	Pro	Glu	Gln	Ile	Leu	Asn	Ser	Gly	Ser	Ile	Glu
		180				185					190				
Lys	Ala	Arg	Ser	Ala	Ala	Ala	Lys	Glu	Val	Gln	Lys	Met	Lys	Thr	Pro
		195				200					205				
Thr	Arg	Arg	Lys	Gln	Arg	Ile	Ile	Cys	Lys	Trp	Ala	Arg	Met	Pro	Thr
	210				215				220						
Ala	Gly	Ala	Arg	Lys	Gly	Ser	Val	Pro	Asn	Trp	Gln	Ser	Trp	Ala	Tyr
	225				230				235			240			
Leu	Pro	Arg	Trp	Ser	Val	Ile	Arg	Arg	Asp	Ile	Lys	Arg	Phe	Thr	Gly
		245				250					255				
Cys	Lys	Ala	Ala	Ile	Cys	Leu	Pro	Met	Arg						
		260				265									

<210> 1271

<211> 867

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1271

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gcggcgaaaa aagaatcgat cttcggcact accgtggcgcg acttcggcga tatggtc 180
gaacaaatcc aagccgagct ggagaaaaaa ggctacaccc tcaaattgggt cgaatttacc 240
gactatgtgc gcccgaatct ggcattggcg gagggcgagt tggacatcaa cgtcttccaa 300
cacaaacctt atcttgacga tttcaaaaaa gaacacaacc tggacatcac cgaaggcttc 360
caagtggcga ccgcgccttt gggactgtat ccgggcaaac tgaaatcgct ggaagaagtc 420
aaagacggca gcaccgtatc cgcccccac gaccgtcca acttcgcacg cgccttggtg 480
atgctgaacg aactgggttg gatcaaactc aaagacggca tcaatccgct gaccgcattcc 540
aaagccgaca tcggaaaaac cctgaaaaac atcaaaatcg tcgagcttga agccgcacaa 600

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ctgccgcga gcccgcgcga cgtggatttt gccgtcgta acggcaacta cgccataagc 660
agcggcatga agctgaccga agccctgttc caagagccga gctttgccta tgtcaactgg 720
tctgccgtca aaaccgcgcga caaagacagc caatggctta aagacgtaac cgaggcctat 780
aactccgacg cgttcaaagc ctacgcgcac aaacgcttcg agggctacaa ataccctgcc 840
gcatggaatg aaggcgcagc caaataa 867

<210> 1272

<211> 288

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1272

Met Lys Thr Phe Phe Lys Thr Leu Ser Thr Ala Ser Leu Ala Leu Ile
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Leu Ala Ala Cys Gly Gly Gln Lys Asp Ser Ala Pro Ala Ala Ser Ala
20 25 30

Ala Ala Pro Ser Ala Asp Asn Gly Ala Ala Lys Lys Glu Ile Val Phe
35 40 45

Gly Thr Thr Val Gly Asp Phe Gly Asp Met Val Lys Glu Gln Ile Gln
50 55 60

Ala Glu Leu Glu Lys Lys Gly Tyr Thr Val Lys Leu Val Glu Phe Thr
65 70 75 80

Asp Tyr Val Arg Pro Asn Leu Ala Leu Ala Glu Gly Glu Leu Asp Ile
85 90 95

Asn Val Phe Gln His Lys Pro Tyr Leu Asp Asp Phe Lys Lys Glu His
100 105 110

Asn Leu Asp Ile Thr Glu Ala Phe Gln Val Pro Thr Ala Pro Leu Gly
115 120 125

Leu Tyr Pro Gly Lys Leu Lys Ser Leu Glu Glu Val Lys Asp Gly Ser
130 135 140

Thr Val Ser Ala Pro Asn Asp Pro Ser Asn Phe Ala Arg Ala Leu Val
145 150 155 160

Met Leu Asn Glu Leu Gly Trp Ile Lys Leu Lys Asp Gly Ile Asn Pro
165 170 175

Leu Thr Ala Ser Lys Ala Asp Ile Ala Glu Asn Leu Lys Asn Ile Lys
180 185 190

Ile Val Glu Leu Glu Ala Ala Gln Leu Pro Arg Ser Arg Ala Asp Val
195 200 205

Asp Phe Ala Val Val Asn Gly Asn Tyr Ala Ile Ser Ser Gly Met Lys
210 215 220

Leu Thr Glu Ala Leu Phe Gln Glu Pro Ser Phe Ala Tyr Val Asn Trp
225 230 235 240

Ser Ala Val Lys Thr Ala Asp Lys Asp Ser Gln Trp Leu Lys Asp Val
245 250 255

Thr Glu Ala Tyr Asn Ser Asp Ala Phe Lys Ala Tyr Ala His Lys Arg
260 265 270

Phe Glu Gly Tyr Lys Tyr Pro Ala Ala Trp Asn Glu Gly Ala Ala Lys
275 280 285

<210> 1273

<211> 117

<212> DNA

<213> Neisseria meningitidis

<400> 1273

caatggctta aagacgtaac cgaggcctat aactccgacg cgttcaaagc ctacgcgcac 60
aaacgcttcg agggctacaa atcccctgcc gcatggaatg aaggcgacg ccaaataa 117

<210> 1274

<211> 38

<212> PRT

<213> Neisseria meningitidis

<400> 1274

Gln Trp Leu Lys Asp Val Thr Glu Ala Tyr Asn Ser Asp Ala Phe Lys
1 5 10 15

Ala Tyr Ala His Lys Arg Phe Glu Gly Tyr Lys Ser Pro Ala Ala Trp

20

25

30

Asn Glu Gly Ala Ala Lys

35

<210> 1275

<211> 864

<212> DNA

<213> Neisseria meningitidis

<400> 1275

ataaaaacct tcttcaaaaac ctttccgccc gccgactcg cgctcatcct cgccgcctgc 60
ggcggtcaaa aagatagcgc gcccgcgc a tccgcttctg ccgcgcgc caacggcg 120
gcaaaaaaaag naatcgtctt cggcacgacc gtggcgact tcggcgatat ggtcaaagaa 180
caaatccaaac cccgagctgga gaaaaaaaggc tacaccgtca aactggtcga gtttaccgac 240
tatgtgcgcc cgaatctggc attggctgag ggcgagtnng acatcaacgt cttccaacac 300
aaaccctatc ttgacgactt caaaaaagaa cacaatctgg acatcaccga agtctccaa 360
gtgccgaccc cgccttggg actgtacccg ggcaagctga aatcgctgga agaagtcaaa 420
gacggcagca cccgtatccgc gcccacgac ccgtccaact tcgcccgcgt cttggtgatg 480
ctcgacgaac tgggttggat caaactcaaa ganggcatca atccgctgac cgcatccaa 540

gcggacattg ccgaaaacctt gaaaaacatc aaaatcgctcg agcttgaagc cgcgcaactg 600
ccgcgtagcc gcgcgcacgt ggattttgnc gtcgtcaacg gcaantacgc cataaggcagc 660
ggcatgaagc tgaccgaagc cctgttccaa gaaccgagct ttgccttatgt caactggct 720
gccgtcaaaa ccgcccacaa agacagccaa tggcttaaag acgttaaccga ggcctataac 780
tccgacgcgt tc当地agccctt cgcgcacaaa cgcttcgagg gctacaaatc ccctgccgca 840
tggaatgaag gcgcagccaa ataa 864

<210> 1276

<211> 287

<212> PRT

<213> Neisseria meningitidis

<400> 1276

Met Lys Thr Phe Phe Lys Thr Leu Ser Ala Ala Ala Leu Ala Leu Ile
1 5 10 15

Leu Ala Ala Cys Gly Gly Gln Lys Asp Ser Ala Pro Ala Ala Ser Ala
20 25 30

Ser Ala Ala Ala Asp Asn Gly Ala Ala Lys Lys Xaa Ile Val Phe Gly
35 40 45

Thr Thr Val Gly Asp Phe Gly Asp Met Val Lys Glu Gln Ile Gln Pro
50 55 60

Glu Leu Glu Lys Lys Gly Tyr Thr Val Lys Leu Val Glu Phe Thr Asp
65 70 75 80

Tyr Val Arg Pro Asn Leu Ala Leu Ala Glu Gly Glu Xaa Asp Ile Asn
85 90 95

Val Phe Gln His Lys Pro Tyr Leu Asp Asp Phe Lys Lys Glu His Asn
100 105 110

Leu Asp Ile Thr Glu Val Phe Gln Val Pro Thr Ala Pro Leu Gly Leu
115 120 125

Tyr Pro Gly Lys Leu Lys Ser Leu Glu Glu Val Lys Asp Gly Ser Thr
130 135 140

Val Ser Ala Pro Asn Asp Pro Ser Asn Phe Ala Arg Val Leu Val Met
145 150 155 160

Leu Asp Glu Leu Gly Trp Ile Lys Leu Lys Xaa Gly Ile Asn Pro Leu
165 170 175

Thr Ala Ser Lys Ala Asp Ile Ala Glu Asn Leu Lys Asn Ile Lys Ile
180 185 190

Val Glu Leu Glu Ala Ala Gln Leu Pro Arg Ser Arg Ala Asp Val Asp
195 200 205

Phe Xaa Val Val Asn Gly Xaa Tyr Ala Ile Ser Ser Gly Met Lys Leu
210 215 220

Thr Glu Ala Leu Phe Gln Glu Pro Ser Phe Ala Tyr Val Asn Trp Ser

225 230 235 240

Ala Val Lys Thr Ala Asp Lys Asp Ser Gln Trp Leu Lys Asp Val Thr

245 250 255

Glu Ala Tyr Asn Ser Asp Ala Phe Lys Ala Tyr Ala His Lys Arg Phe
260 265 270

Glu Gly Tyr Lys Ser Pro Ala Ala Trp Asn Glu Gly Ala Ala Lys
275 280 285

<210> 1277

<211> 699

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1277

atgttaaatc gggtatatttca tcggatattg ggtgttgccg acaatttgta tccgtgttta 60
tcggattttcac tataatagcc ggtttgccgt tgcaggcggt tttatggaa 120
aggcggatga tggtaacggcg tttgataatc ggcatcagcg gggcgagcgg tttccaatac 180
ggcgtgaagg ctttggact tttgcgcgcg caagatgtcg aaacgcacct tgtggtatcg 240
aaaggcgcgg agatggcgcg cgcttcggaa acggattata cggaaagacga agtatatgcc 300
ttggctgatt tcgtccatcc gatcggcaat atcggggcgt gcattgcccag cggtacgttt 360
aaaacggacg ggatgctggt cgcaccctgt tcgatgcgga cgcttgcctc tgtcgccac 420
ggcttcggcg acaacctctt gacgcgtgcg gcggatgtgg ttttgaagga aaggcggcgg 480
ctggctgctga tggtgccgaa aacgcccgtg aaccttgcctt atttggacaa tatgaagcgg 540
gtaacggaaa tgggcggcgt ggtgtttccc cctgttcctg ccatgttaccg caagccgcag 600
acggcggacg acatagtggc gcacagtatac gcacacacgc tgtcgctgtt cggaatcgat 660
acgcccggatt tggcggaaatg gcaggaaatg gcggattaa 699

<210> 1278

<211> 232

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1278

Met Leu Asn Arg Val Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
1 5 10 15

Tyr Pro Cys Leu Ser Asp Phe Cys Phe Phe Thr Ile Ile Ala Gly Leu
20 25 30

Pro Leu Gln Ala Val Leu Trp Glu Arg Arg Met Met Val Arg Arg Leu
35 40 45

Ile Ile Gly Ile Ser Gly Ala Ser Gly Phe Gln Tyr Gly Val Lys Ala
50 55 60

Leu Glu Leu Leu Arg Ala Gln Asp Val Glu Thr His Leu Val Val Ser
65 70 75 80

Lys Gly Ala Glu Met Ala Arg Ala Ser Glu Thr Asp Tyr Thr Lys Asp
85 90 95

Glu Val Tyr Ala Leu Ala Asp Phe Val His Pro Ile Gly Asn Ile Gly
100 105 110

Ala Cys Ile Ala Ser Gly Thr Phe Lys Thr Asp Gly Met Leu Val Ala
115 120 125

Pro Cys Ser Met Arg Thr Leu Ala Ser Val Ala His Gly Phe Gly Asp
130 135 140

Asn Leu Leu Thr Arg Ala Ala Asp Val Val Leu Lys Glu Arg Arg Arg
145 150 155 160

Leu Val Leu Met Val Arg Glu Thr Pro Leu Asn Leu Ala His Leu Asp
165 170 175

Asn Met Lys Arg Val Thr Glu Met Gly Gly Val Val Phe Pro Pro Val
180 185 190

Pro Ala Met Tyr Arg Lys Pro Gln Thr Ala Asp Asp Ile Val Ala His
195 200 205

Ser Ile Ala His Thr Leu Ser Leu Phe Gly Ile Asp Thr Pro Asp Leu
210 215 220

Ala Glu Trp Gln Gly Met Ala Asp
225 230

<210> 1279

<211> 693

<212> DNA

<213> Neisseria meningitidis

<400> 1279

atgttaaatc gggatattta tcggatattg ggtgttgcgg acaatttgta tccgcgttta 60
tcggattttct gtttttcac tataatagcc ggtttccgt tgcaggcggt tttatggaa 120
aggcgatga tggtaggcgc tttgataatc ggcatacgcg gggcgagcggt tttccaatac 180
ggcgtgaagg ctggaaact ttgcgcgcg caagatgtcg aaacgcaccc tggatgtatcg 240
aaagggtgcgg agatggcgcg cgcttcggaa acggcttatg cgagagacga ggtatatgcc 300
ttggcggact tcgtcatcc gatcgcaat atcgccccgt gcattgccag cggtacgaaa 360
aaaacggatg ggtatgttgtt cgcccccgt tcgatgcggc cgcttcgcctc tgtcgcgcac 420
ggcttcggcg acaatctgt gacgcgtgcg gggatgtgg ttttgaagga aaggccggcg 480
ctggtgctga tggtaggcga aacgcgcgtg aacccgtccc atttggacaa tatgaagcg 540
gwaacggaaa tggccggcggt ggtttccctg cctgttccgt cgatgtaccg caaacccgcag 600
acggccggacg acatagtggc gcacagttt gcacacgcgtt tgtcgttgtt cggaatcgat 660
acgcccggatt cggccggatgt gcarggaatgt gcg 693

<210> 1280

<211> 231

<212> PRT

<213> Neisseria meningitidis

<400> 1280

Met Leu Asn Arg Val Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
1 5 10 15

Tyr	Pro	Arg	Leu	Ser	Asp	Phe	Cys	Phe	Phe	Thr	Ile	Ile	Ala	Gly	Leu
			20				25						30		
Pro	Leu	Gln	Ala	Val	Leu	Trp	Glu	Arg	Arg	Met	Met	Val	Arg	Arg	Leu
	35				40					45					
Ile	Ile	Gly	Ile	Ser	Gly	Ala	Ser	Gly	Phe	Gln	Tyr	Gly	Val	Lys	Ala
	50			55				60							
Leu	Glu	Leu	Leu	Arg	Ala	Gln	Asp	Val	Glu	Thr	His	Leu	Val	Val	Ser
65			70			75				80					
Lys	Gly	Ala	Glu	Met	Ala	Arg	Ala	Ser	Glu	Thr	Ala	Tyr	Ala	Arg	Asp
	85				90				95						
Glu	Val	Tyr	Ala	Leu	Ala	Asp	Phe	Val	His	Pro	Ile	Gly	Asn	Ile	Gly
	100				105				110						
Ala	Cys	Ile	Ala	Ser	Gly	Thr	Phe	Lys	Thr	Asp	Gly	Met	Leu	Val	Ala
	115			120			125								
Pro	Cys	Ser	Met	Arg	Thr	Leu	Ala	Ser	Val	Ala	His	Gly	Phe	Gly	Asp
	130			135			140								
Asn	Leu	Leu	Thr	Arg	Ala	Ala	Asp	Val	Val	Leu	Lys	Glu	Arg	Arg	Arg
145			150			155				160					
Leu	Val	Leu	Met	Val	Arg	Glu	Thr	Pro	Leu	Asn	Leu	Ala	His	Leu	Asp
	165			170			175								
Asn	Met	Lys	Arg	Xaa	Thr	Glu	Met	Gly	Gly	Val	Val	Phe	Pro	Pro	Val
	180			185			190								
Pro	Ala	Met	Tyr	Arg	Lys	Pro	Gln	Thr	Ala	Asp	Asp	Ile	Val	Ala	His
	195			200			205								
Ser	Val	Ala	His	Ala	Leu	Ser	Leu	Phe	Gly	Ile	Asp	Thr	Pro	Asp	Ser
	210			215			220								
Ala	Glu	Trp	Gln	Gly	Met	Ala									
	225			230											

<210> 1281
<211> 699
<212> DNA
<213> Neisseria meningitidis

<400> 1281
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tcggattttct gtttttacac tataatagcc ggtttgcgt tgcaggcggt tttatggaa 120
aggcggatga tggcacggcg tttgataatc ggcacatcgt gggcgagcgg tttccaatac 180
ggcgtgaagg ctttganct ttacgcgcg caagatatcg aaacgcacct tgtggtatcg 240
aaaggtgcgg agatggcgcg cgcttcggaa acggntttag cgagagacga ngtatatgcc 300
ttggcggact tngtgcatcc gatcggcaat atcggggcgt gcattgcccag cggtacgtt 360
aaaacggacg ggtatgttgcgtt cgccccctgt tcgatgcggc cgcttgcctc ggtcgtgcac 420

ggcttcggcg acaacctctt gacgcgtgcg gcggatgtgg ttttgaagga aaggcggcgg 480
ctggtgctga tggtgcgcga aacgcgcgt aacccccc atttggacaa tatgaancgg 540
gtaacggaaa tgggcggcgt ggtttccc cctgttcctg cgatgtaccg caaacgcag 600
acggcggacg acatagtggc gcacagtgtt gcacacgctt tgtcgctgtt cggaatcgat 660
acgccggatt cggcggaatg gcaggaaatg gcggattaa 699

<210> 1282

<211> 232

<212> PRT

<213> Neisseria meningitidis

<400> 1282

Met Leu Asn Arg Ile Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
1 5 10 15

Tyr Pro Tyr Leu Ser Asp Phe Cys Phe Phe Thr Ile Ile Ala Gly Leu
20 25 30

Pro Leu Gln Ala Val Leu Trp Glu Arg Arg Met Met Val Arg Arg Leu
35 40 45

Ile Ile Gly Ile Ser Gly Ala Ser Gly Phe Gln Tyr Gly Val Lys Ala
50 55 60

Leu Xaa Leu Leu Arg Ala Gln Asp Ile Glu Thr His Leu Val Val Ser
65 70 75 80

Lys Gly Ala Glu Met Ala Arg Ala Ser Glu Thr Xaa Tyr Ala Arg Asp
85 90 95

Xaa Val Tyr Ala Leu Ala Asp Xaa Val His Pro Ile Gly Asn Ile Gly
100 105 110

Ala Cys Ile Ala Ser Gly Thr Phe Lys Thr Asp Gly Met Leu Val Ala
115 120 125

Pro Cys Ser Met Arg Thr Leu Ala Ser Val Val His Gly Phe Gly Asp
130 135 140

Asn Leu Leu Thr Arg Ala Ala Asp Val Val Leu Lys Glu Arg Arg Arg
145 150 155 160

Leu Val Leu Met Val Arg Glu Thr Pro Leu Asn Leu Ala His Leu Asp
165 170 175

Asn Met Xaa Arg Val Thr Glu Met Gly Gly Val Val Phe Pro Pro Val
180 185 190

Pro Ala Met Tyr Arg Lys Pro Gln Thr Ala Asp Asp Ile Val Ala His
195 200 205

Ser Val Ala His Ala Leu Ser Leu Phe Gly Ile Asp Thr Pro Asp Ser
210 215 220

Ala Glu Trp Gln Gly Met Ala Asp
225 230

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<210> 1283
<211> 699
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1283
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tcggattttcac tataatagcc gggttgcgcgt tgcaggcggt ttatggaa 120
aggcgatga tggtagccgcg tttgataatc ggcattcagcg gggcgagcgg tttccaataac 180
ggcgtgaagg ctttggaaact tttgcgcgcg caagatgtcg aaacgcacct tgtgttatcg 240

aaaggcgccgg agatggcgcg cgcttcggaa acggattata cggaaagacga agtataatgcc 300
ttggctgatt tcgtccatcc gatcgccaaat atcggggcggt gcattgccag cggtacgttt 360
aaaacggacg ggatgcttgtt cgcaccctgt tcgatgcggc cgcttgcctc tgtcgcgcac 420
ggcttcggcg acaaacctt gacgcgtgcg gggatgtgg ttttgaagga aaggcgccgg 480
ctgggtgtga tggtagccgcg aacggccgtt aaccttgcggcc atttggacaa tatgaagcg 540
gtaacggaaa tggcgccgtt ggtgtttccc cctgttcctg cgtatgtaccg caagccgcac 600
acggcgacg acatagtggc gcacagtttgc acacacacgc tgctcgatgtt cggaaatcgat 660
acggccggatt tggcgaaatg gcaggaaatg gggattaa 699
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<210> 1284
<211> 232
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1284
Met Leu Asn Arg Val Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
 1           5           10          15

Tyr Pro Cys Leu Ser Asp Phe Cys Phe Phe Thr Ile Ile Ala Gly Leu
 20          25          30

Pro Leu Gln Ala Val Leu Trp Glu Arg Arg Met Met Val Arg Arg Leu
 35          40          45

Ile Ile Gly Ile Ser Gly Ala Ser Gly Phe Gln Tyr Gly Val Lys Ala
 50          55          60

Leu Glu Leu Leu Arg Ala Gln Asp Val Glu Thr His Leu Val Val Ser
 65          70          75          80

Lys Gly Ala Glu Met Ala Arg Ala Ser Glu Thr Asp Tyr Thr Lys Asp
 85          90          95

.
Glu Val Tyr Ala Leu Ala Asp Phe Val His Pro Ile Gly Asn Ile Gly
 100         105         110

Ala Cys Ile Ala Ser Gly Thr Phe Lys Thr Asp Gly Met Leu Val Ala
 115         120         125

Pro Cys Ser Met Arg Thr Leu Ala Ser Val Ala His Gly Phe Gly Asp
 130         135         140

Asn Leu Leu Thr Arg Ala Ala Asp Val Val Leu Lys Glu Arg Arg Arg

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145	150	155	160
Leu Val Leu Met Val Arg Glu Thr Pro Leu Asn Leu Ala His Leu Asp			
165	170	175	
Asn Met Lys Arg Val Thr Glu Met Gly Gly Val Val Phe Pro Pro Val			
180	185	190	
Pro Ala Met Tyr Arg Lys Pro Gln Thr Ala Asp Asp Ile Val Ala His			
195	200	205	
Ser Ile Ala His Thr Leu Ser Leu Phe Gly Ile Asp Thr Pro Asp Leu			
210	215	220	
Ala Glu Trp Gln Gly Met Ala Asp			
225	230		

<210> 1285
<211> 699
<212> DNA
<213> Neisseria meningitidis

<400> 1285
atgttaaatc gggtatttta tcggatattg ggtttgccg acaatttcta tccgcgttta 60
tcggattttct gtttttcac tataatagcc ggtttccgt tgcaggcggt tttatggaa 120
aggcggatga tggtaacggcg tttgataatc ggcacatcagcg gggcgagcggt tttccaatac 180
ggcgtgaagg ctttgcgcgcg caagatgtcg aaacgcacct tgggtatcg 240
aaaggtgcgg agatggcgcg cgcttcggaa acggcttatg cgagagacga ggtatatgcc 300
ttggcggact tcgtgcacatcc gatcggcaat atcggggcgt gcattgcacag cggtaacgttt 360
aaaacggatg ggatgctggc cgccccctgt tcgatgcgga cgcttgccctc tgtcggcac 420
gccttcggcg acaaactgtgcg gacgcgtgcg gcggatgtgg ttttgaaggg aaggcggcg 480
ctgggtctga tggtaacggcg aacgcgcgt aaccttgccc atttggacaaa tatgaagcg 540
gtaacggaaa tggggcggcggt ggtttccc cctgttcctg cgatgtaccg caaaccgcag 600
acggcggacg acatagtggc gcacagtgtt gcacacgcgtt tgtcgctgtt cggaatcgat 660
acgcccggatt cggcggaaatg gcaggaaatg gcggattaa 699

<210> 1286
<211> 232
<212> PRT
<213> Neisseria meningitidis

<400> 1286
Met Leu Asn Arg Val Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
1 5 10 15
Tyr Pro Arg Leu Ser Asp Phe Cys Phe Phe Thr Ile Ile Ala Gly Leu
20 25 30
Pro Leu Gln Ala Val Leu Trp Glu Arg Arg Met Met Val Arg Arg Leu
35 40 45
Ile Ile Gly Ile Ser Gly Ala Ser Gly Phe Gln Tyr Gly Val Lys Ala
50 55 60
Leu Glu Leu Leu Arg Ala Gln Asp Val Glu Thr His Leu Val Val Ser

65

70

75

80

Lys Gly Ala Glu Met Ala Arg Ala Ser Glu Thr Ala Tyr Ala Arg Asp
85 90 95

Glu Val Tyr Ala Leu Ala Asp Phe Val His Pro Ile Gly Asn Ile Gly
100 105 110

Ala Cys Ile Ala Ser Gly Thr Phe Lys Thr Asp Gly Met Leu Val Ala
115 120 125

Pro Cys Ser Met Arg Thr Leu Ala Ser Val Ala His Gly Phe Gly Asp
130 135 140

Asn Leu Leu Thr Arg Ala Ala Asp Val Val Leu Lys Glu Arg Arg Arg
145 150 155 160

Leu Val Leu Met Val Arg Glu Thr Pro Leu Asn Leu Ala His Leu Asp
165 170 175

Asn Met Lys Arg Val Thr Glu Met Gly Gly Val Val Phe Pro Pro Val
180 185 190

Pro Ala Met Tyr Arg Lys Pro Gln Thr Ala Asp Asp Ile Val Ala His
195 200 205

Ser Val Ala His Ala Leu Ser Leu Phe Gly Ile Asp Thr Pro Asp Ser
210 215 220

Ala Glu Trp Gln Gly Met Ala Asp
225 230

<210> 1287

<211> 699

<212> DNA

<213> Neisseria meningitidis

<400> 1287

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aggcggatga tggtagccg tttgataatc ggcatcagtg gggcgagccg tttccaatac 180
ggcgtgaagg ctttganct ttacgcgcg caagatatcg aaacgcacct tgggtatcg 240
aaaggtgcgg agatggcgcg cgcttcggaa acggnttatg cgagagacga ngtatatgcc 300
ttggcggact tngtgcattcc gatcggcaat atcggggcgt gcattgcac cggtacgttt 360
aaaacggacg ggtatgcgtt cgccccctgt tcgatgcggc cgcttgcctc ggtcgac 420
ggcttcggcg acaaccttta gacgcgtgcg gggatgtgg ttttgaagga aaggcggcg 480
ctgggtctga tggtagccg aacgcgcgtg aacctgcctt atttggacaa tatgaancgg 540
gtaacggaaa tggcggcggt ggtgttccc cctgttcctg cgatgtaccg caaacccgag 600
acggcggacg acatagtggc gcacagtgtt gcacacgctt tgcgtgtt cgaaatcgat 660
acgccggatt cggcggatg gcaggaaatg gggattaa 699

<210> 1288

<211> 232

<212> PRT

<213> Neisseria meningitidis

<400> 1288

Met Leu Asn Arg Ile Phe Tyr Arg Ile Leu Gly Val Ala Asp Asn Leu
1 5 10 15

Tyr Pro Tyr Leu Ser Asp Phe Cys Phe Phe Thr Ile Ile Ala Gly Leu
20 25 30

Pro Leu Gln Ala Val Leu Trp Glu Arg Arg Met Met Val Arg Arg Leu
35 40 45

Ile Ile Gly Ile Ser Gly Ala Ser Gly Phe Gln Tyr Gly Val Lys Ala
50 55 60

Leu Xaa Leu Leu Arg Ala Gln Asp Ile Glu Thr His Leu Val Val Ser
65 70 75 80

Lys Gly Ala Glu Met Ala Arg Ala Ser Glu Thr Xaa Tyr Ala Arg Asp
85 90 95

Xaa Val Tyr Ala Leu Ala Asp Xaa Val His Pro Ile Gly Asn Ile Gly
100 105 110

Ala Cys Ile Ala Ser Gly Thr Phe Lys Thr Asp Gly Met Leu Val Ala
115 120 125

Pro Cys Ser Met Arg Thr Leu Ala Ser Val Val His Gly Phe Gly Asp
130 135 140

Asn Leu Leu Thr Arg Ala Ala Asp Val Val Leu Lys Glu Arg Arg Arg
145 150 155 160

Leu Val Leu Met Val Arg Glu Thr Pro Leu Asn Leu Ala His Leu Asp
165 170 175

Asn Met Xaa Arg Val Thr Glu Met Gly Gly Val Val Phe Pro Pro Val
180 185 190

Pro Ala Met Tyr Arg Lys Pro Gln Thr Ala Asp Asp Ile Val Ala His
195 200 205

Ser Val Ala His Ala Leu Ser Leu Phe Gly Ile Asp Thr Pro Asp Ser
210 215 220

Ala Glu Trp Gln Gly Met Ala Asp
225 230

<210> 1289

<211> 1368

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1289

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gttgcggcac ttgcgtgccg gcgcgccttg gggtgtttgg gtttggaaac gcaaatacg 120
tggccaaacg atttggtcgt cggacgc'gac aaattggcgc gcattctgat tgaaacagtc 180

agggcgggct gtaaaaacggt tgccgtggc ggtatcgca tcaatttcgt gctgcccaag 240
 gaagtggaaa acgcgcgttc cgtgcagtcg ctgttcaga cggcatcgcg gcggggcaat 300
 gccgatgccc ccgtattgtc gaaacattt cttgcggAAC tggcgccgt gttggAACAA 360
 tatgcggaaag aagggttcgc gccatTTTA aatgagtgatg aaacggccaa ccgcgaccac 420
 gcacaggcgg tattgtctt gcgcgacggc gaaaccgtgt gcgaaggcac gttaaaggc 480
 gtggacggac gaggcgttct gcacttggaa acggcagaag gcgaacagac ggtcgctcgc 540
 ggcgaaatca gcctgcggcc cgacaacagg tcggttccg tgccgaagcg gccggattcg 600
 gaacgtttt tgctgttggaa aggccggAAC agccggctca agtggcgtg ggtggAAAAC 660
 ggcacgttcg caaccgtggg cagcgcggc taccgcgatt tgtcgcctt gggcgccgg 720
 tggcgggAAA aggccggatgg aatgtccgc atcgtcggtt gcgcgtgtt cggagaatcc 780
 aaaaaggcac aagtgaagga acagctcgcc cgaaaaatcg agtggctgcc gtctccgca 840
 caggcttgg gcatacgcAA ccactaccgc cacccgcAA aacacggcgc cgaccgttgg 900
 ttcaacgcct tggcgccg ccgcttcgcg gcacacgcct gcgtcgctgt cagttgcggc 960
 acggcgttAA cggttgcgc gtcaccgcgac gacggacatt atctcgccgg aaccatcatg 1020
 cccggcttcc acctgtatgaa agaatcgctc gccgtccgaa ccgccaacct caaccgcgg 1080
 gccggcaaac gttaccctt cccgaccaca acgggcaacg ccgtcgcaag cggcatgatg 1140
 gacgcggttt gcggctcgat aatgtatgtg cacggccgtt tgaaaagaaaa aaacggcgcg 1200
 gcgaaggcctg tcgatgtcat cattaccggc ggcggccgg cgaaaagtgcg cgaagccctg 1260
 ccgcctgcgt tttggcggAA aaataccgtg cgcgtggcgg acaacctgt catccacggg 1320
 ctgctgaacc tgattgccgc cgaaggcggg gaatcggAAC acgcttaa 1368

<210> 1290

<211> 455

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1290

Met	Phe	Ser	Phe	Gly	Trp	Ala	Phe	Asp	Arg	Pro	Gln	Tyr	Glu	Leu	Gly
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Ser	Leu	Ser	Pro	Val	Ala	Ala	Leu	Ala	Cys	Arg	Arg	Ala	Leu	Gly	Cys
									20				25		30

Leu	Gly	Leu	Glu	Thr	Gln	Ile	Lys	Trp	Pro	Asn	Asp	Leu	Val	Val	Gly
									35				40		45

Arg	Asp	Lys	Leu	Gly	Gly	Ile	Leu	Ile	Glu	Thr	Val	Arg	Ala	Gly	Gly
									50				55		60

Lys	Thr	Val	Ala	Val	Val	Gly	Ile	Gly	Ile	Asn	Phe	Val	Leu	Pro	Lys
									65				70		80

Glu	Val	Glu	Asn	Ala	Ala	Ser	Val	Gln	Ser	Leu	Phe	Gln	Thr	Ala	Ser
									85				90		95

Arg	Arg	Gly	Asn	Ala	Asp	Ala	Ala	Val	Leu	Leu	Glu	Thr	Leu	Leu	Ala
									100				105		110

Glu	Leu	Gly	Ala	Val	Leu	Glu	Gln	Tyr	Ala	Glu	Glu	Gly	Phe	Ala	Pro
								115				120		125	

Phe	Leu	Asn	Glu	Tyr	Glu	Thr	Ala	Asn	Arg	Asp	His	Gly	Lys	Ala	Val
								130				135		140	

Leu	Leu	Leu	Arg	Asp	Gly	Glu	Thr	Val	Cys	Glu	Gly	Thr	Val	Lys	Gly
								145				150		155	160

Val Asp Gly Arg Gly Val Leu His Leu Glu Thr Ala Glu Gly Glu Gln
165 170 175

Thr Val Val Ser Gly Glu Ile Ser Leu Arg Pro Asp Asn Arg Ser Val
180 185 190

Ser Val Pro Lys Arg Pro Asp Ser Glu Arg Phe Leu Leu Leu Glu Gly
195 200 205

Gly Asn Ser Arg Leu Lys Trp Ala Trp Val Glu Asn Gly Thr Phe Ala
210 215 220

Thr Val Gly Ser Ala Pro Tyr Arg Asp Leu Ser Pro Leu Gly Ala Glu
225 230 235 240

Trp Ala Glu Lys Ala Asp Gly Asn Val Arg Ile Val Gly Cys Ala Val
245 250 255

Cys Gly Glu Ser Lys Lys Ala Gln Val Lys Glu Gln Leu Ala Arg Lys
260 265 270

Ile Glu Trp Leu Pro Ser Ser Ala Gln Ala Leu Gly Ile Arg Asn His
275 280 285

Tyr Arg His Pro Glu Glu His Gly Ser Asp Arg Trp Phe Asn Ala Leu
290 295 300

Gly Ser Arg Arg Phe Ser Arg Asn Ala Cys Val Val Val Ser Cys Gly
305 310 315 320

Thr Ala Val Thr Val Asp Ala Leu Thr Asp Asp Gly His Tyr Leu Gly
325 330 335

Gly Thr Ile Met Pro Gly Phe His Leu Met Lys Glu Ser Leu Ala Val
340 345 350

Arg Thr Ala Asn Leu Asn Arg Pro Ala Gly Lys Arg Tyr Pro Phe Pro
355 360 365

Thr Thr Thr Gly Asn Ala Val Ala Ser Gly Met Met Asp Ala Val Cys
370 375 380

Gly Ser Ile Met Met His Gly Arg Leu Lys Glu Lys Asn Gly Ala
385 390 395 400

Gly Lys Pro Val Asp Val Ile Ile Thr Gly Gly Gly Ala Ala Lys Val
405 410 415

Ala Glu Ala Leu Pro Pro Ala Phe Leu Ala Glu Asn Thr Val Arg Val
420 425 430

Ala Asp Asn Leu Val Ile His Gly Leu Leu Asn Leu Ile Ala Ala Glu
435 440 445

Gly Gly Glu Ser Glu His Ala
450 455

<210> 1291
<211> 1167
<212> DNA
<213> *Neisseria meningitidis*

<400> 1291
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gttgcggcag tggcgtgtcg gcgcgccttg tcgcgtttag gtttggatgt gcarattaag 120
tggcccaatg atttggttgc cggacgcgcac aaattggcg gcattctgtat tgaaaacggc 180
aggacggcgc gcaaaaacggt tgccgtggtc ggtatcggca tcaattttgt cctgccaan 240
gaagttagaaa atgccgcctt cgtcaatcg ctgtttcaga cggcatcgcg gcggggcaat 300
gccgatgccc ccgtgctgct nnnnnnnnnn nnnnnnnnnn nnnngaaat cagcctgcgg 360
tccgacnaca ggcgggttgc cgtgncaag cggcgggatt cggAACgttt tctgctgttg 420
gacggcggca acagccggct caagtggcg tgggtggaaa acggcacgtt cgcaaccgtc 480
ggtagcgcgc cgtaccgcga ttgtcgcct ttggcgcgcgg agtggcggaa aaaggcggat 540
ggaaatgtcc gcatcgtcggtt tgccgtgtg tgccgagaat tcaaaaaggc acaagtgcag 600
gaacagctcg cccaaaaaat cgagtggctg ccgtcttccg cacaggctt gttggcata 660
cgcaaccact accgccaccc cgaagaacac ggttccgacc gctggttcaa cgccctggc 720
agccgcgcct tcagccgcaa cgcyclgcgc gtcgtcagg gccgcacggc ggttaacggt 780
gacgcgcgtca ccgatgacgg acattatc grrggaaacca tcatgccccg tttccacctg 840
atgaaagaat cgctgcgcgt ccgaaccggc aacctcaacc ggcacggcgg taagcgttat 900
cctttcccgaa ccacaacggg caatgccgtc gccagcggca tgcgttgcgc ggtttgcggc 960
tcggttatga tgatgcacgg gcgttgcggaa gaaaaaacgg gggcggcggaa gctgtcgtat 1020
gtcatcatta ccgcggcgggg cgcggcaaaa gttgcggaaag ccctgcggcc tgcatttttg 1080
gcggaaaata ccgtgcgcgt ggcggacaac ctgcgtcattt acgggttgcattt gaacatgatt 1140
gcgcggcaag gcagggaaata tgaacat tgaacat 1167

<210> 1292
<211> 389
<212> PRT
<213> *Neisseria meningitidis*

<400> 1292
Met Phe Ser Phe Gly Trp Val Phe Asp Arg Pro Gln Tyr Glu Leu Gly
1 5 10 15

Ser Leu Ser Pro Val Ala Ala Val Ala Cys Arg Arg Ala Leu Ser Arg
20 25 30

Leu Gly Leu Asp Val Gln Ile Lys Trp Pro Asn Asp Leu Val Val Gly
 35 40 45

Arg Asp Lys Leu Gly Gly Ile Leu Ile Glu Thr Val Arg Thr Gly Gly
50 55 60

Glu Val Glu Asn Ala Ala Ser Val Gln Ser Leu Phe Gln Thr Ala Ser
85 90 95

Arg Arg Gly Asn Ala Asp Ala Ala Val Leu Leu Xaa Xaa Xaa Xaa Xaa Xaa
100 105 110

Xaa Xaa Xaa Glu Ile Ser Leu Arg Ser Asp Xaa Arg Pro Val Ser Val
115 120 125

Xaa Lys Arg Arg Asp Ser Glu Arg Phe Leu Leu Leu Asp Gly Gly Asn
130 135 140

Ser Arg Leu Lys Trp Ala Trp Val Glu Asn Gly Thr Phe Ala Thr Val
145 150 160

Gly Ser Ala Pro Tyr Arg Asp Leu Ser Pro Leu Gly Ala Glu Trp Ala
165 170 175

Glu Lys Ala Asp Gly Asn Val Arg Ile Val Gly Cys Ala Val Cys Gly
180 185 190

Glu Phe Lys Lys Ala Gln Val Gln Glu Gln Leu Ala Arg Lys Ile Glu
195 200 205

Trp Leu Pro Ser Ser Ala Gln Ala Leu Phe Gly Ile Arg Asn His Tyr
210 215 220

Arg His Pro Glu Glu His Gly Ser Asp Arg Trp Phe Asn Ala Leu Gly
225 230 235 240

Ser Arg Arg Phe Ser Arg Asn Ala Cys Val Val Val Ser Cys Gly Thr
245 250 255

Ala Val Thr Val Asp Ala Leu Thr Asp Asp Gly His Tyr Leu Gly Gly
260 265 270

Thr Ile Met Pro Gly Phe His Leu Met Lys Glu Ser Leu Ala Val Arg
275 280 285

Thr Ala Asn Leu Asn Arg His Ala Gly Lys Arg Tyr Pro Phe Pro Thr
290 295 300

Thr Thr Gly Asn Ala Val Ala Ser Gly Met Met Asp Ala Val Cys Gly
305 310 315 320

Ser Val Met Met Met His Gly Arg Leu Lys Glu Lys Thr Gly Ala Gly
325 330 335

Lys Pro Val Asp Val Ile Ile Thr Gly Gly Ala Ala Lys Val Ala
340 345 350

Glu Ala Leu Pro Pro Ala Phe Leu Ala Glu Asn Thr Val Arg Val Ala
355 360 365

Asp Asn Leu Val Ile Tyr Gly Leu Leu Asn Met Ile Ala Ala Glu Gly
370 375 380

Arg Glu Tyr Glu His
385

<210> 1293
<211> 1368

<212> DNA

<213> Neisseria meningitidis

<400> 1293

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gttgcggcag tggcgccg ggcgcgcctt tcgcgtttgg gtttggaaac gcaaatacg 120
tggccaaacg atttggtcgt cggacgcgac aaattggcg gcattctgtat tgaaacggc 180
aggacggcg gcaaaaacggt tgccgtggc ggtatccgca tcaatttcgt gctgccaag 240
gaagtgaaa acgcgcgttc cgtgcataatcg ctgtttcaga cggcatcgcg gcggggaaat 300
gccgatccg ccgtgttgct gaaacgcgtt ttggcggaaac ttgatgcgtt gtttgtca 360
tatgcgcgg acggatttgc gcctttgtg gcggaatatc aggctccaa ccgcgaccac 420
gcgaaggcgg tattgtgtt gcgcgacggc gaaacgggt tcgaaggcac ggttaaaggc 480
gtggacggac aaggcgttct gcacttgaa acggcagagg gcaaacagac ggtcgctc 540
ggcggaaatca gcctgcgtc cgacgacagg ccgggttccg tgccgaagcg gcgggattcg 600
gaacgtttc tgctgttgaa cggcggcaac agccggctca agtggcgtt ggtggaaaac 660
ggcacgttc caaccgtcgg tagcgcgcg taccgcgatt tgtcgcctt gggcgcggag 720
tggcggaaa aggtggatgg aatgtccgc atcgtcggtt gcccgtgtt cggagaattc 780
aaaaaggcac aagtgcagga acagctcgcc cgaaaaatcg agtggctgcc gtcttccgca 840
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ttcaacgc当地 tggcggccg ccgc当地tccgc cgcaacgc当地 gctgcgtcgt cagttgcggc 960
acggcggtaa cgggttgc当地 gctaccgc当地 gacggacatt atctcggggg aaccatcatg 1020
cccggttcc acctgtatgaa agaatcgctc gccgtccgaa ccgccaacct caaccggcac 1080
gccggtaagc gttatccccc cccgaccaca acgggcaatg ccgtcgccag cggcatgatg 1140
gtatgcgtt gcccgtcgtt tatgtatgtt cacggcgtt tgaaagaaaa aaccggggcg 1200
ggcaagcctg tcgatgtcat cattaccggc ggcggcgc当地 caaaagttgc cgaagccctg 1260
ccgcctgc当地 ttttggc当地 aaataccgtt cgcgtggc当地 acaacctgtt cattcacggg 1320
ctgctgaacc tgattgc当地 cgaaggc当地 ggaaatcggaaat atacttaa 1368

<210> 1294

<211> 455

<212> PRT

<213> Neisseria meningitidis

<400> 1294

Met Phe Ser Phe Gly Trp Val Phe Asp Arg Pro Gln Tyr Glu Leu Gly
1 5 10 15

Ser Leu Ser Pro Val Ala Ala Val Ala Cys Arg Arg Ala Leu Ser Arg
20 25 30

Leu Gly Leu Lys Thr Gln Ile Lys Trp Pro Asn Asp Leu Val Val Gly
35 40 45

Arg Asp Lys Leu Gly Gly Ile Leu Ile Glu Thr Val Arg Thr Gly Gly
50 55 60

Lys Thr Val Ala Val Val Gly Ile Gly Ile Asn Phe Val Leu Pro Lys
65 70 75 80

Glu Val Glu Asn Ala Ala Ser Val Gln Ser Leu Phe Gln Thr Ala Ser
85 90 95

Arg Arg Gly Asn Ala Asp Ala Ala Val Leu Leu Glu Thr Leu Leu Ala
100 105 110

Glu Leu Asp Ala Val Leu Leu Gln Tyr Ala Arg Asp Gly Phe Ala Pro
115 120 125

Phe Val Ala Glu Tyr Gln Ala Ala Asn Arg Asp His Gly Lys Ala Val
130 135 140

Leu Leu Leu Arg Asp Gly Glu Thr Val Phe Glu Gly Thr Val Lys Gly
145 150 155 160

Val Asp Gly Gln Gly Val Leu His Leu Glu Thr Ala Glu Gly Lys Gln
165 170 175

Thr Val Val Ser Gly Glu Ile Ser Leu Arg Ser Asp Asp Arg Pro Val
180 185 190

Ser Val Pro Lys Arg Arg Asp Ser Glu Arg Phe Leu Leu Leu Asp Gly
195 200 205

Gly Asn Ser Arg Leu Lys Trp Ala Trp Val Glu Asn Gly Thr Phe Ala
210 215 220

Thr Val Gly Ser Ala Pro Tyr Arg Asp Leu Ser Pro Leu Gly Ala Glu
225 230 235 240

Trp Ala Glu Lys Val Asp Gly Asn Val Arg Ile Val Gly Cys Ala Val
245 250 255

Cys Gly Glu Phe Lys Lys Ala Gln Val Gln Glu Gln Leu Ala Arg Lys
260 265 270

Ile Glu Trp Leu Pro Ser Ser Ala Gln Ala Leu Gly Ile Arg Asn His
275 280 285

Tyr Arg His Pro Glu Glu His Gly Ser Asp Arg Trp Phe Asn Ala Leu
290 295 300

Gly Ser Arg Arg Phe Ser Arg Asn Ala Cys Val Val Val Ser Cys Gly
305 310 315 320

Thr Ala Val Thr Val Asp Ala Leu Thr Asp Asp Gly His Tyr Leu Gly
325 330 335

Gly Thr Ile Met Pro Gly Phe His Leu Met Lys Glu Ser Leu Ala Val
340 345 350

Arg Thr Ala Asn Leu Asn Arg His Ala Gly Lys Arg Tyr Pro Phe Pro
355 360 365

Thr Thr Thr Gly Asn Ala Val Ala Ser Gly Met Met Asp Ala Val Cys
370 375 380

Gly Ser Val Met Met Met His Gly Arg Leu Lys Glu Lys Thr Gly Ala
385 390 395 400

Gly Lys Pro Val Asp Val Ile Ile Thr Gly Gly Gly Ala Ala Lys Val
405 410 415

Ala Glu Ala Leu Pro Pro Ala Phe Leu Ala Glu Asn Thr Val Arg Val
420 425 430

Ala Asp Asn Leu Val Ile His Gly Leu Leu Asn Leu Ile Ala Ala Glu
435 440 445

Gly Gly Glu Ser Glu His Thr
450 455

<210> 1295
<211> 1779
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 1295

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caacacgtat cgcattggc gcgtgaggcg gacatgaagc cgcagcagct caacggttt 120
tggcagcaga tgccggcgca tatacgcggg ctgttgcgcc aacacgacgg ctattggcg 180
ctggcgcgc ccttggcggt ttgcgtatgcc gaagggttgc gcgatctggg gaaaaggcg 240
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cttgcgtgcc ggccgcgttt ggggtgtttt ggtttggaaa cgcaaataa gtggccaaac 540
gatttggtcg tcggacgcga caaattggc ggcattctga ttgaaacagt cagggcggc 600
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aacccgcctt cggcgcagtc gctgtttcag acggcatcgc ggcggggcaa tgccgatgcc 720
gccgtattgc tggaaacatt gcttgcggaa ctgggcgcgg tggttggaaaca atatgcggaa 780
gaagggttcg cggcattttt aaatgagttt gaaacggcca accgcgacca cggcaaggcg 840
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gcaaccgtgg gcaaggcgcgc gtaccgcgtt ttgcgcctt tgggcgcggaa gtggcggaa 1140
aaggcggatg gaaatgtccg catcgtcggt tgccgcgtgt gggagaatc caaaaaggca 1200
caagtgaagg aacagctcgc cggaaaaatc gagtggctgc cgtctccgc acaggcttt 1260
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cgttaccctt tcccgaccac aacggcaac gccgtcgca gggcatgat gacgcgggtt 1560
tgccgctcga taatgtatgtatgcacat tatctcgccg gaaccatcat gcccggcttc 1620
gtcgatgtca tcattaccgg cggcgccgca gcaaaagtgc cggaaacccct gcccgcgtca 1680
ttttggcgaaaataccgt gcgctggcg gacaacctcg tcatccacgg gctgtgaac 1740
ctgattggcccg cggaaaggcg ggaatcgaa cacqcttaa 1779

<210> 1296
<211> 592
<212> PRT
<213> *Neisseria gonorrhoeae*

<400> 1296
Met Thr Val Leu Lys Pro Ser His Trp Arg Val Leu Ala Glu Leu Ala
1 5 10 15

Asp Gly Leu Pro Gln His Val Ser Gln Leu Ala Arg Glu Ala Asp Met
20 25 30

Lys Pro Gln Gln Leu Asn Gly Phe Trp Gln Gln Met Pro Ala His Ile
35 40 45

Arg Gly Leu Leu Arg Gln His Asp Gly Tyr Trp Arg Leu Val Arg Pro
50 55 60

Leu Ala Val Phe Asp Ala Glu Gly Leu Arg Asp Leu Gly Glu Arg Ser
65 70 75 80

Gly Phe Gln Thr Ala Leu Lys His Glu Cys Ala Ser Ser Asn Asp Glu
85 90 95

Ile Leu Glu Leu Ala Arg Ile Ala Pro Asp Lys Ala His Lys Thr Ile
100 105 110

Cys Val Thr His Leu Gln Ser Lys Gly Arg Gly Arg Gln Gly Arg Lys
115 120 125

Trp Ser His Arg Leu Gly Glu Cys Leu Met Phe Ser Phe Gly Trp Ala
130 135 140

Phe Asp Arg Pro Gln Tyr Glu Leu Gly Ser Leu Ser Pro Val Ala Ala
145 150 155 160

Leu Ala Cys Arg Arg Ala Leu Gly Cys Leu Gly Leu Glu Thr Gln Ile
165 170 175

Lys Trp Pro Asn Asp Leu Val Val Gly Arg Asp Lys Leu Gly Gly Ile
180 185 190

Leu Ile Glu Thr Val Arg Ala Gly Gly Lys Thr Val Ala Val Val Gly
195 200 205

Ile Gly Ile Asn Phe Val Leu Pro Lys Glu Val Glu Asn Ala Ala Ser
210 215 220

Val Gln Ser Leu Phe Gln Thr Ala Ser Arg Arg Gly Asn Ala Asp Ala
225 230 235 240

Ala Val Leu Leu Glu Thr Leu Leu Ala Glu Leu Gly Ala Val Leu Glu
245 250 255

Gln Tyr Ala Glu Glu Gly Phe Ala Pro Phe Leu Asn Glu Tyr Glu Thr
260 265 270

Ala Asn Arg Asp His Gly Lys Ala Val Leu Leu Arg Asp Gly Glu
275 280 285

Thr Val Cys Glu Gly Thr Val Lys Gly Val Asp Gly Arg Gly Val Leu
290 295 300

His Leu Glu Thr Ala Glu Gly Glu Gln Thr Val Val Ser Gly Glu Ile
305 310 315 320

Ser Leu Arg Pro Asp Asn Arg Ser Val Ser Val Pro Lys Arg Pro Asp
 325 330 335
 Ser Glu Arg Phe Leu Leu Leu Glu Gly Gly Asn Ser Arg Leu Lys Trp
 340 345 350
 Ala Trp Val Glu Asn Gly Thr Phe Ala Thr Val Gly Ser Ala Pro Tyr
 355 360 365
 Arg Asp Leu Ser Pro Leu Gly Ala Glu Trp Ala Glu Lys Ala Asp Gly
 370 375 380
 Asn Val Arg Ile Val Gly Cys Ala Val Cys Gly Glu Ser Lys Lys Ala
 385 390 395 400
 Gln Val Lys Glu Gln Leu Ala Arg Lys Ile Glu Trp Leu Pro Ser Ser
 405 410 415
 Ala Gln Ala Leu Gly Ile Arg Asn His Tyr Arg His Pro Glu Glu His
 420 425 430
 Gly Ser Asp Arg Trp Phe Asn Ala Leu Gly Ser Arg Arg Phe Ser Arg
 435 440 445
 Asn Ala Cys Val Val Val Ser Cys Gly Thr Ala Val Thr Val Asp Ala
 450 455 460
 Leu Thr Asp Asp Gly His Tyr Leu Gly Gly Thr Ile Met Pro Gly Phe
 465 470 475 480
 His Leu Met Lys Glu Ser Leu Ala Val Arg Thr Ala Asn Leu Asn Arg
 485 490 495
 Pro Ala Gly Lys Arg Tyr Pro Phe Pro Thr Thr Thr Gly Asn Ala Val
 500 505 510
 Ala Ser Gly Met Met Asp Ala Val Cys Gly Ser Ile Met Met Met His
 515 520 525
 Gly Arg Leu Lys Glu Lys Asn Gly Ala Gly Lys Pro Val Asp Val Ile
 530 535 540
 Ile Thr Gly Gly Ala Ala Lys Val Ala Glu Ala Leu Pro Pro Ala
 545 550 555 560
 Phe Leu Ala Glu Asn Thr Val Arg Val Ala Asp Asn Leu Val Ile His
 565 570 575
 Gly Leu Leu Asn Leu Ile Ala Ala Glu Gly Gly Glu Ser Glu His Ala
 580 585 590

<211> 1779
<212> DNA
<213> Neisseria meningitidis

<400> 1297

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caacacgtct cgcaactggc gcgtatggc gatatgaagc cgcagcagct caacggtttt 120
tggcagcaga tgccggcgca catacgggg ctgttgcgec aacacgacgg ctattggcg 180
ctggcgcgc cattggcggt ttgcgtatgcc gaaggtttc gcgagctggg gaaaaggctcg 240
ggttttcaga cggcattgaa gcacgcgtgc gcgtccagca acgacgagat actgaaattg 300
gcgcggattt cgccggacaa ggccgcacaaa accatatgcg tgaccacct gcaaagttaag 360
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gatttgggtt tcggacgcga caaattgggc ggcattctga ttgaaacggt caggacgggc 600
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aatgcccgtt ccgtcaatc gctgtttcag acggcatcgcc ggcggggccaa tgccgtatgcc 720
gcccgtctgc tggaaaacgct gttggtgaa ctggacgcgg tggttgtgca atatgcgcgg 780
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atgattqccq ccqaqqcaq qqaatatqaa catatttaa 1779

<210> 1298
<211> 592
<212> PRT
<213> *Neisseria meningitidis*

<400> 1298
Met Thr Val Leu Lys Leu Ser His Trp Arg Val Leu Ala Glu Leu Ala
1 5 10 15

Asp Gly Leu Pro Gln His Val Ser Gln Leu Ala Arg Met Ala Asp Met
20 25 . 30

Lys Pro Gln Gln Leu Asn Gly Phe Trp Gln Gln Met Pro Ala His Ile
35 40 45

Arg Gly Leu Leu Arg Gln His Asp Gly Tyr Trp Arg Leu Val Arg Pro
50 55 60

Leu Ala Val Phe Asp Ala Glu Gly Leu Arg Glu Leu Gly Glu Arg Ser

65	70	75	80
Gly Phe Gln Thr Ala Leu Lys His Glu Cys Ala Ser Ser Asn Asp Glu			
85	90	95	
Ile Leu Glu Leu Ala Arg Ile Ala Pro Asp Lys Ala His Lys Thr Ile			
100	105	110	
Cys Val Thr His Leu Gln Ser Lys Gly Arg Gly Arg Gln Gly Arg Lys			
115	120	125	
Trp Ser His Arg Leu Gly Glu Cys Leu Met Phe Ser Phe Gly Trp Val			
130	135	140	
Phe Asp Arg Pro Gln Tyr Glu Leu Gly Ser Leu Ser Pro Val Ala Ala			
145	150	155	160
Val Ala Cys Arg Arg Ala Leu Ser Arg Leu Gly Leu Asp Val Gln Ile			
165	170	175	
Lys Trp Pro Asn Asp Leu Val Val Gly Arg Asp Lys Leu Gly Gly Ile			
180	185	190	
Leu Ile Glu Thr Val Arg Thr Gly Gly Lys Thr Val Ala Val Val Gly			
195	200	205	
Ile Gly Ile Asn Phe Val Leu Pro Lys Glu Val Glu Asn Ala Ala Ser			
210	215	220	
Val Gln Ser Leu Phe Gln Thr Ala Ser Arg Arg Gly Asn Ala Asp Ala			
225	230	235	240
Ala Val Leu Leu Glu Thr Leu Leu Val Glu Leu Asp Ala Val Leu Leu			
245	250	255	
Gln Tyr Ala Arg Asp Gly Phe Ala Pro Phe Val Ala Glu Tyr Gln Ala			
260	265	270	
Ala Asn Arg Asp His Gly Lys Ala Val Leu Leu Arg Asp Gly Glu			
275	280	285	
Thr Val Phe Glu Gly Thr Val Lys Gly Val Asp Gly Gln Gly Val Leu			
290	295	300	
His Leu Glu Thr Ala Glu Gly Lys Gln Thr Val Val Ser Gly Glu Ile			
305	310	315	320
Ser Leu Arg Ser Asp Asp Arg Pro Val Ser Val Pro Lys Arg Arg Asp			
325	330	335	
Ser Glu Arg Phe Leu Leu Asp Gly Gly Asn Ser Arg Leu Lys Trp			
340	345	350	
Ala Trp Val Glu Asn Gly Thr Phe Ala Thr Val Gly Ser Ala Pro Tyr			
355	360	365	
Arg Asp Leu Ser Pro Leu Gly Ala Glu Trp Ala Glu Lys Ala Asp Gly			

370	375	380
Asn Val Arg Ile Val Gly Cys Ala Val Cys Gly Glu Phe Lys Lys Ala		
385	390	395
Gln Val Gln Glu Gln Leu Ala Arg Lys Ile Glu Trp Leu Pro Ser Ser		
405	410	415
Ala Gln Ala Leu Gly Ile Arg Asn His Tyr Arg His Pro Glu Glu His		
420	425	430
Gly Ser Asp Arg Trp Phe Asn Ala Leu Gly Ser Arg Arg Phe Ser Arg		
435	440	445
Asn Ala Cys Val Val Val Ser Cys Gly Thr Ala Val Thr Val Asp Ala		
450	455	460
Leu Thr Asp Asp Gly His Tyr Leu Gly Gly Thr Ile Met Pro Gly Phe		
465	470	475
His Leu Met Lys Glu Ser Leu Ala Val Arg Thr Ala Asn Leu Asn Arg		
485	490	495
His Ala Gly Lys Arg Tyr Pro Phe Pro Thr Thr Thr Gly Asn Ala Val		
500	505	510
Ala Ser Gly Met Met Asp Ala Val Cys Gly Ser Val Met Met Met His		
515	520	525
Gly Arg Leu Lys Glu Lys Thr Gly Ala Gly Lys Pro Val Asp Val Ile		
530	535	540
Ile Thr Gly Gly Ala Ala Lys Val Ala Glu Ala Leu Pro Pro Ala		
545	550	555
Phe Leu Ala Glu Asn Thr Val Arg Val Ala Asp Asn Leu Val Ile Tyr		
565	570	575
Gly Leu Leu Asn Met Ile Ala Ala Glu Gly Arg Glu Tyr Glu His Ile		
580	585	590

<210> 1299
 <211> 1779
 <212> DNA
 <213> Neisseria meningitidis

<400> 1299
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 tggcagcaga tgccggcgca catacgcggg ctgttgcgcc aacacgacgg ctattggcgg 180
 ctggtgccgc cattggcggt ttgcgtgcc gaaggttgc gcgagctggg ggaaaggtcg 240
 ggtttcaga cggcattgaa gcacgagtgc gcgtccagca acgacgagat actggaaattg 300
 gcgcgattt cggccggacaa ggcgcacaaa accatatgtg tgaccacacct gcaaagtaag 360

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gtggcgtgcc	ggcgcgcctt	gtcgcgtttg	ggtttgaaaa	cgcaaatcaa	gtggccaaac	540
gatttggtcg	tcggacgcga	caaattgggc	ggcattctga	ttgaaacggt	caggacgggc	600
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gccgtgttgc	tggaaacgct	gttggcggaa	cttgatgcgg	tgttgttgc	atatgcgcgg	780
gacggatttgc	cgccttttgc	ggcggaaatat	caggctgcga	accgcgacca	cggcaaggcg	840
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agcctgcgg	ccgacgacag	ggcggttcc	gtggcgaagc	ggcgggattt	ggaacgtttt	1020
ctgtgttgg	acggcggcaa	cagccggc	aagtgggcgt	gggtggaaaa	cggcacgttc	1080
gcaaccgtcg	gtacgcgcgc	gtaccgcgtat	ttgtcgccctt	tgggcccgg	gtgggcccggaa	1140
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caagtgcagg	aacagctcgc	ccggaaaatc	gagtggtcgc	cgttccgc	acaggctttg	1260
ggcataacgc	accactaccg	ccaccccgaa	gaacacgggtt	ccgaccgt	gttcaacgc	1320
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acgggtgacg	cgctcaccga	tgacggacat	tatctcgggg	gaaccatcat	gcccggttt	1440
cacctgtatga	aagaatcgct	cgccgtccga	accgccaacc	tcaaccggca	cgccggtaag	1500
cgttatcctt	tcccgaccac	aacgggcaat	ggcgtcgcca	gcggcatgtat	ggatgcgg	1560
tgcggctcg	ttatgtatgt	gcacgggcgt	ttgaaagaaa	aaaccggggc	gggcaagcct	1620
gtcgatgtca	tcattaccgg	ggcggcgcgc	gaaaaagttg	ccgaagccct	gcccgc	1680
tttttggcgg	aaaataccgt	gcccgtggcg	gacaacctcg	tcattcacgg	qctgtgaac	1740
ctgattggcc	ccgaaggcg	qgaatcgaa	cataactaa			1779

<210> 1300

<211> 592

<212> PRT

<213> *Neisseria meningitidis*

<400> 1300

Met Thr Val Leu Lys Pro Ser His Trp Arg Val Leu Ala Glu Leu Ala
 1 5 10 15

Asp Gly Leu Pro Gln His Val Ser Gln Leu Ala Arg Met Ala Asp Met
20 25 30

Lys Pro Gln Gln Leu Asn Gly Phe Trp Gln Gln Met Pro Ala His Ile
35 40 45

Arg Gly Leu Leu Arg Gln His Asp Gly Tyr Trp Arg Leu Val Arg Pro
50 55 60

Leu Ala Val Phe Asp Ala Glu Gly Leu Arg Glu Leu Gly Glu Arg Ser
65 70 75 80

Gly Phe Gln Thr Ala Leu Lys His Glu Cys Ala Ser Ser Asn Asp Glu
85 90 95

Ile Leu Glu Leu Ala Arg Ile Ala Pro Asp Lys Ala His Thr Ile
100 105 110

Cys Val Thr His Leu Gln Ser Lys Gly Arg Gly Arg Gln Gly Arg Lys
115 120 125

Trp Ser His Arg Leu Gly Glu Cys Leu Met Phe Ser Phe Gly Trp Val

130 135 140
Phe Asp Arg Pro Gln Tyr Glu Leu Gly Ser Leu Ser Pro Val Ala Ala
145 150 155 160
Val Ala Cys Arg Arg Ala Leu Ser Arg Leu Gly Leu Lys Thr Gln Ile
165 170 175
Lys Trp Pro Asn Asp Leu Val Val Gly Arg Asp Lys Leu Gly Gly Ile
180 185 190
Leu Ile Glu Thr Val Arg Thr Gly Gly Lys Thr Val Ala Val Val Gly
195 200 205
Ile Gly Ile Asn Phe Val Leu Pro Lys Glu Val Glu Asn Ala Ala Ser
210 215 220
Val Gln Ser Leu Phe Gln Thr Ala Ser Arg Arg Gly Asn Ala Asp Ala
225 230 235 240
Ala Val Leu Leu Glu Thr Leu Leu Ala Glu Leu Asp Ala Val Leu Leu
245 250 255
Gln Tyr Ala Arg Asp Gly Phe Ala Pro Phe Val Ala Glu Tyr Gln Ala
260 265 270
Ala Asn Arg Asp His Gly Lys Ala Val Leu Leu Arg Asp Gly Glu
275 280 285
Thr Val Phe Glu Gly Thr Val Lys Gly Val Asp Gly Gln Gly Val Leu
290 295 300
His Leu Glu Thr Ala Glu Gly Lys Gln Thr Val Val Ser Gly Glu Ile
305 310 315 320
Ser Leu Arg Ser Asp Asp Arg Pro Val Ser Val Pro Lys Arg Arg Asp
325 330 335
Ser Glu Arg Phe Leu Leu Leu Asp Gly Gly Asn Ser Arg Leu Lys Trp
340 345 350
Ala Trp Val Glu Asn Gly Thr Phe Ala Thr Val Gly Ser Ala Pro Tyr
355 360 365
Arg Asp Leu Ser Pro Leu Gly Ala Glu Trp Ala Glu Lys Val Asp Gly
370 375 380
Asn Val Arg Ile Val Gly Cys Ala Val Cys Gly Glu Phe Lys Lys Ala
385 390 395 400
Gln Val Gln Glu Gln Leu Ala Arg Lys Ile Glu Trp Leu Pro Ser Ser
405 410 415
Ala Gln Ala Leu Gly Ile Arg Asn His Tyr Arg His Pro Glu Glu His
420 425 430
Gly Ser Asp Arg Trp Phe Asn Ala Leu Gly Ser Arg Arg Phe Ser Arg

435

440

445

Asn Ala Cys Val Val Val Ser Cys Gly Thr Ala Val Thr Val Asp Ala
450 455 460

Leu Thr Asp Asp Gly His Tyr Leu Gly Gly Thr Ile Met Pro Gly Phe
465 470 475 480

His Leu Met Lys Glu Ser Leu Ala Val Arg Thr Ala Asn Leu Asn Arg
485 490 495

His Ala Gly Lys Arg Tyr Pro Phe Pro Thr Thr Gly Asn Ala Val
500 505 510

Ala Ser Gly Met Met Asp Ala Val Cys Gly Ser Val Met Met Met His
515 520 525

Gly Arg Leu Lys Glu Lys Thr Gly Ala Gly Lys Pro Val Asp Val Ile
530 535 540

Ile Thr Gly Gly Ala Ala Lys Val Ala Glu Ala Leu Pro Pro Ala
545 550 555 560

Phe Leu Ala Glu Asn Thr Val Arg Val Ala Asp Asn Leu Val Ile His
565 570 575

Gly Leu Leu Asn Leu Ile Ala Ala Glu Gly Gly Glu Ser Glu His Thr
580 585 590

<210> 1301

<211> 1356

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1301

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gatgtccgca ccattaccat cggcattgat ttgcacgact gcatcagcac cgacatcgac 120
gtgttaaacc aaaacattta caacaaaatc accacggctcg gcaaagactt ggtggcaacg 180
gogaaacacc tttccgcca atacggcgtg ccgattgtga atcagcgcatt ttccgttacg 240
ccgattgccc aaatcgccgc ggcgacccaa gccgacagtt atgtcagcgt ggcgcagact 300
ttggacaagg cagccaaagc catcgccgtg tcctttatcg gcggcttttc cgcgtggtg 360
caaaaaggta tgcgccttc ggtatggatgttgcgtt ccgttcccgaa agcgatgaaa 420
actaccgata tcgtgtcag ctccatcaat atcggcagca cgcgtgccgg tatcaatatg 480
gatgcggta agctggcagg cggaaaccatc aaacgcacgg ctgaaatcac acccgaaagg 540
ttcggctcgt ccaaaatcgt cgtgttctgc aacgcggctgg aagacaatcc gtttatggcg 600
ggtcgcgttcc acggctcggt cgaaggcgat gctgtgatta atgtcggcgt atccggtcca 660
ggcgtggta aagccgcgtt ggaaaattcg gacgcggta gcctgaccga ggtcgccgaa 720
gtcgtgaaga aaaccgcattt caaaatcacc cgcgtggcg aactcatcg tcgcgaagcc 780
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tccagcgcgg tcggcggttt gagcggcgcg tttatccccg tttccgaaga cgaaggatgt 1020
attgcccggc cggaggcagg cgtgttgcac ctggacaaac tcgaagccat gaccggccgtc 1080

tgctccgttg gtttggacat gattgccgtt cccggcgaca cgccccgcga caccatttc 1140
gcatcatcg ccgacgaagc cgccatcgcc atgatcaaca gcaaaaccac cgccgtgcgc 1200
attattccgg taacgggcaa aaccgtcgcc gacagcgtcg agttcggcgg tctgttggc 1260
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aggattcccg caccgttca atcgatgaaa aactga 1356

<210> 1302

<211> 451

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1302

Met Ser Ile Gln Ser Gly Glu Ile Leu Glu Thr Val Lys Met Val Ala

1

5

10

15

Asp Arg Asn Phe Asp Val Arg Thr Ile Thr Ile Gly Ile Asp Leu His
20 25 30

Asp Cys Ile Ser Thr Asp Ile Asp Val Leu Asn Gln Asn Ile Tyr Asn
35 40 45

Lys Ile Thr Thr Val Gly Lys Asp Leu Val Ala Thr Ala Lys His Leu
50 55 60

Ser Ala Lys Tyr Gly Val Pro Ile Val Asn Gln Arg Ile Ser Val Thr
65 70 75 80

Pro Ile Ala Gln Ile Ala Ala Ala Thr Lys Ala Asp Ser Tyr Val Ser
85 90 95

Val Ala Gln Thr Leu Asp Lys Ala Ala Lys Ala Ile Gly Val Ser Phe
100 105 110

Ile Gly Gly Phe Ser Ala Leu Val Gln Lys Gly Met Ser Pro Ser Asp
115 120 125

Glu Val Leu Ile Arg Ser Val Pro Glu Ala Met Lys Thr Thr Asp Ile
130 135 140

Val Cys Ser Ser Ile Asn Ile Gly Ser Thr Arg Ala Gly Ile Asn Met
145 150 155 160

Asp Ala Val Lys Leu Ala Gly Glu Thr Ile Lys Arg Thr Ala Glu Ile
165 170 175

Thr Pro Glu Gly Phe Gly Cys Ala Lys Ile Val Val Phe Cys Asn Ala
180 185 190

Val Glu Asp Asn Pro Phe Met Ala Gly Ala Phe His Gly Ser Gly Glu
195 200 205

Ala Asp Ala Val Ile Asn Val Gly Val Ser Gly Pro Gly Val Val Lys
210 215 220

Ala Ala Leu Glu Asn Ser Asp Ala Val Ser Leu Thr Glu Val Ala Glu

225	230	235	240
Val Val Lys Lys Thr Ala Phe Lys Ile Thr Arg Val Gly Glu Leu Ile			
245	250	255	
Gly Arg Glu Ala Ser Lys Met Leu Asn Ile Pro Phe Gly Ile Leu Asp			
260	265	270	
Leu Ser Leu Ala Pro Thr Pro Ala Val Gly Asp Ser Val Ala Arg Ile			
275	280	285	
Leu Glu Glu Met Gly Leu Ser Val Cys Gly Thr His Gly Thr Thr Ala			
290	295	300	
Ala Leu Ala Leu Leu Asn Asp Ala Val Lys Lys Gly Gly Met Met Ala			
305	310	315	320
Ser Ser Ala Val Gly Gly Leu Ser Gly Ala Phe Ile Pro Val Ser Glu			
325	330	335	
Asp Glu Gly Met Ile Ala Ala Glu Ala Gly Val Leu Thr Leu Asp			
340	345	350	
Lys Leu Glu Ala Met Thr Ala Val Cys Ser Val Gly Leu Asp Met Ile			
355	360	365	
Ala Val Pro Gly Asp Thr Pro Ala His Thr Ile Ser Gly Ile Ile Ala			
370	375	380	
Asp Glu Ala Ala Ile Gly Met Ile Asn Ser Lys Thr Thr Ala Val Arg			
385	390	395	400
Ile Ile Pro Val Thr Gly Lys Thr Val Gly Asp Ser Val Glu Phe Gly			
405	410	415	
Gly Leu Leu Gly Tyr Ala Pro Val Met Pro Ala Lys Glu Gly Ser Cys			
420	425	430	
Glu Val Phe Val Asn Arg Gly Gly Arg Ile Pro Ala Pro Val Gln Ser			
435	440	445	
Met Lys Asn			
450			

<210> 1303
<211> 1344
<212> DNA
<213> Neisseria meningitidis

<400> 1303
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gtgttgaacc aaaatattta caataaaaatt accacagtgc gcaaagactt ggtcactacg 180
gcaaaatatac tgtctgccaa atacggcgta ccgattgtga atcagcgcat ttccggttacg 240
ccgattgccc aaatcgccgc ggccacccat gctgattctt acgtcagcgt ggcgcaaact 300
ttggataaag ctgccaaagc catcggtgtg tctttatcg gcggttttc cgcgttggtg 360

caaaaaggga tgtcgccttc gnatgaggtg ttaatccgct ccattccgaa agcgatgaag 420
 actaccgata ttgtgtgcwg ctccatcaat atcggcagta cgcgtgccgg tatcaatatg 480
 gatgcggta agctggcggg cgaaaccgtc aaacgcacgg cgaaatcac gcccgaaggt 540
 ttcggctgcg ctaaaattgt cgttctgc aacgcgggg aagacaaccc gttwtggcg 600
 ggcgcgtttc atggttcggg cgatgccgtt atcaatgtcg gcgtatccgg cccaggtgtc 660
 gtaaaagccg cggtggaaaa ttcatatgca acgacattga ccgaagttgc ggaagttagtg 720
 aagaaaaactg ctttcaaaat taccgcgtg ggcgaactca tcggccgcga agcctcaaaa 780
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 ttggatatga ttgcgttcc cggcgcacacg cccgcgcaca ccattccgg catcattgcc 1140
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 accgtaaaa ccgtcggcga cacggcggag ttgcggcgt tggggctca cgcgcctgtg 1260
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 ccggttcaat cgatgaaaaa ctga 1344

<210> 1304

<211> 447

<212> PRT

<213> Neisseria meningitidis

<400> 1304

Met	Ser	Ile	Gln	Ser	Gly	Glu	Ile	Leu	Glu	Thr	Val	Lys	Met	Val	Ala
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Asp	Gln	Asn	Phe	Asp	Val	Arg	Thr	Ile	Thr	Ile	Gly	Ile	Asp	Leu	His
														30	
20								25							

Asp	Cys	Ile	Ser	Ser	Asp	Ile	Asn	Val	Leu	Asn	Gln	Asn	Ile	Tyr	Asn
35							40					45			

Lys	Ile	Thr	Thr	Val	Gly	Lys	Asp	Leu	Val	Thr	Thr	Ala	Lys	Tyr	Leu
50						55						60			

Ser	Ala	Lys	Tyr	Gly	Val	Pro	Ile	Val	Asn	Gln	Arg	Ile	Ser	Val	Thr
65						70			75			80			

Pro	Ile	Ala	Gln	Ile	Ala	Ala	Ala	Thr	His	Ala	Asp	Ser	Tyr	Val	Ser
85								90				95			

Val	Ala	Gln	Thr	Leu	Asp	Lys	Ala	Ala	Lys	Ala	Ile	Gly	Val	Ser	Phe
100							105					110			

Ile	Gly	Gly	Phe	Ser	Ala	Leu	Val	Gln	Lys	Gly	Met	Ser	Pro	Ser	Asp
115							120				125				

Glu	Val	Leu	Ile	Arg	Ser	Ile	Pro	Glu	Ala	Met	Lys	Thr	Thr	Asp	Ile
130						135				140					

Val	Cys	Xaa	Ser	Ile	Asn	Ile	Gly	Ser	Thr	Arg	Ala	Gly	Ile	Asn	Met
145						150			155			160			

Asp	Ala	Val	Lys	Leu	Ala	Gly	Glu	Thr	Val	Lys	Arg	Thr	Ala	Glu	Ile
165							170				175				

Thr Pro Glu Gly Phe Gly Cys Ala Lys Ile Val Val Phe Cys Asn Ala
 180 185 190
 Val Glu Asp Asn Pro Phe Xaa Ala Gly Ala Phe His Gly Ser Gly Asp
 195 200 205
 Ala Val Ile Asn Val Gly Val Ser Gly Pro Gly Val Val Lys Ala Ala
 210 215 220
 Leu Glu Asn Ser Asp Ala Thr Thr Leu Thr Glu Val Ala Glu Val Val
 225 230 235 240
 Lys Lys Thr Ala Phe Lys Ile Thr Arg Val Gly Glu Leu Ile Gly Arg
 245 250 255
 Glu Ala Ser Lys Met Leu Asn Ile Pro Phe Gly Ile Leu Asp Leu Ser
 260 265 270
 Pro Thr Pro Pro Val Gly Asp Ser Val Ala Arg Ile Leu Glu Glu Met
 275 280 285
 Gly Leu Ser Val Cys Gly Thr His Gly Thr Thr Ala Ala Leu Ala Leu
 290 295 300
 Leu Asn Asp Ala Val Lys Lys Gly Gly Met Met Ala Ser Ser Ala Val
 305 310 315 320
 Gly Gly Leu Ser Gly Ala Phe Ile Pro Val Ser Glu Asp Glu Gly Met
 325 330 335
 Ile Xaa Ala Ala Glu Ala Gly Val Leu Thr Leu Asp Lys Leu Glu Ala
 340 345 350
 Met Thr Ala Val Cys Ser Val Gly Leu Asp Met Ile Ala Val Pro Gly
 355 360 365
 Asp Thr Pro Ala His Thr Ile Ser Gly Ile Ile Ala Asp Glu Ala Ala
 370 375 380
 Ile Gly Met Ile Asn Ser Lys Thr Thr Ala Val Arg Ile Ile Pro Val
 385 390 395 400
 Thr Gly Lys Thr Val Gly Asp Thr Val Glu Phe Gly Gly Leu Leu Gly
 405 410 415
 Tyr Ala Pro Val Met Pro Val Lys Glu Gly Ser Cys Glu Val Phe Val
 420 425 430
 Asn Arg Gly Gly Arg Ile Pro Ala Pro Val Gln Ser Met Lys Asn
 435 440 445

<210> 1305
 <211> 1356
 <212> DNA
 <213> Neisseria meningitidis

<400> 1305

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gatgtccgca ccattaccat cggcattgtat ttgcacgact gcatcagcac cgacatcgac 120
gtgttgaacc aaaatattta caacaaaatt accacggctg gcaaagactt ggtggcgaca 180
gcaaaaatatac tgtctccaa atacggcgtg ccgattgtga atcagcgcat ttctgtcag 240
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actactgata tcgtgtgcag ctccatcaat atcggcagta cgccgcggc tatcaatatg 480
gacgcggctca gactggcggg cggaaaccatc aaacgcacgg ctgaaatcac actagaaggt 540
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tacgcgcctg taatggcggtt aaaagaaggc tcatgcaag tgttcgtcaa ccggggcgcc 1320
aggattccccg caccgggttca atcgatgaaa aactgaa 1356

<210> 1306

<211> 451

<212> PRT

<213> Neisseria meningitidis

<400> 1306

Met Ser Ile Gln Ser Gly Glu Ile Leu Glu Thr Val Lys Met Val Ala
1 5 10 15

Asp Gln Asn Phe Asp Val Arg Thr Ile Thr Ile Gly Ile Asp Leu His
20 25 30

Asp Cys Ile Ser Thr Asp Ile Asp Val Leu Asn Gln Asn Ile Tyr Asn
35 40 45

Lys Ile Thr Thr Val Gly Lys Asp Leu Val Ala Thr Ala Lys Tyr Leu
50 55 60

Ser Ala Lys Tyr Gly Val Pro Ile Val Asn Gln Arg Ile Ser Val Thr
65 70 75 80

Pro Ile Ala Gln Ile Ala Ala Ala Thr His Ala Asp Ser Tyr Val Ser
85 90 95

Val Ala Gln Thr Leu Asp Lys Ala Ala Lys Ala Ile Gly Val Ser Phe
100 105 110

Ile Gly Gly Phe Ser Ala Leu Val Gln Lys Gly Met Ser Pro Ser Asp
115 120 125

Glu Val Leu Ile Arg Ser Ile Pro Glu Ala Met Lys Thr Thr Asp Ile
130 135 140

Val Cys Ser Ser Ile Asn Ile Gly Ser Thr Arg Ala Gly Ile Asn Met
145 150 155 160

Asp Ala Val Arg Leu Ala Gly Glu Thr Ile Lys Arg Thr Ala Glu Ile
165 170 175

Thr Leu Glu Gly Phe Gly Cys Ala Lys Ile Val Val Phe Cys Asn Ala
180 185 190

Val Glu Asp Asn Pro Phe Met Ala Gly Ala Phe His Gly Ser Gly Glu
195 200 205

Ala Asp Ala Val Ile Asn Val Gly Val Ser Gly Pro Gly Val Val Lys
210 215 220

Ala Ala Leu Glu Asn Ser Asp Ala Thr Thr Leu Thr Glu Val Ala Glu
225 230 235 240

Val Val Lys Lys Thr Ala Phe Lys Ile Thr Arg Val Gly Glu Leu Ile
245 250 255

Gly Arg Glu Ala Ser Lys Met Leu Asn Ile Pro Phe Gly Ile Leu Asp
260 265 270

Leu Ser Leu Ala Pro Thr Pro Ala Val Gly Asp Ser Val Ala Arg Ile
275 280 285

Leu Glu Glu Met Gly Leu Ser Val Cys Gly Thr His Gly Thr Thr Ala
290 295 300

Ala Leu Ala Leu Leu Asn Asp Ala Val Lys Lys Gly Gly Met Met Ala
305 310 315 320

Ser Ser Ala Val Gly Gly Leu Ser Gly Ala Phe Ile Pro Val Ser Glu
325 330 335

Asp Glu Gly Met Ile Ala Ala Ala Glu Ala Gly Val Leu Thr Leu Asp
340 345 350

Lys Leu Glu Ala Met Thr Ala Val Cys Ser Val Gly Leu Asp Met Ile
355 360 365

Ala Val Pro Gly Asp Thr Pro Ala His Thr Ile Ser Gly Ile Ile Ala
370 375 380

Asp Glu Ala Ala Ile Gly Met Ile Asn Ser Lys Thr Thr Ala Val Arg
385 390 395 400

Ile Ile Pro Val Thr Gly Lys Thr Val Gly Asp Ser Val Glu Phe Gly
405 410 415

Gly Leu Leu Gly Tyr Ala Pro Val Met Pro Val Lys Glu Gly Ser Cys
420 425 430

Glu Val Phe Val Asn Arg Gly Gly Arg Ile Pro Ala Pro Val Gln Ser
435 440 445

Met Lys Asn
450

<210> 1307
<211> 522
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1307
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gttttgcgtc cacgcgtgtc tcaagaaccc ctcgggttat ccgacagcgc aatcgccgccc 180
gtcgactcg ccgcgtgtt cggcatatg tgccgggtgt tttcggatt taaggcgcc 240
aaaggcggtgg caacggcatt gggcggtgtt ctggcactct ctcctgcaac tgccttggtc 300
tgcgcgttga tttggcttgtt gatggcattt ggcttcaaag tatcctccct tgccgcgtg 360
gtcgccacaa ccgcgcgcgc ccttgcgcga ctgtttta tgccgcatac ttcttgatt 420
ttcgcaaccc tcgcaatcgc catattgggtt ttgctccgcataa agagcaa catcctaacc 480
ctgattaaag gcaaagaaag caaaatcggc gaaaaaacgtt ga 522

<210> 1308
<211> 173
<212> PRT
<213> Neisseria meningitidis

<400> 1308
Met Asp Asp Pro Arg Thr Tyr Gly Ser Gly Asn Pro Gly Ala Thr Asn
1 5 10 15

Val Leu Arg Ser Gly Lys Lys Ala Ala Ala Leu Thr Leu Leu Gly
20 25 30

Asp Ala Ala Lys Gly Leu Val Ala Val Leu Leu Ala Arg Val Leu Gln
35 40 45

Glu Pro Leu Gly Leu Ser Asp Ser Ala Ile Ala Ala Val Ala Leu Ala
50 55 60

Ala Leu Val Gly His Met Trp Pro Val Phe Phe Gly Phe Lys Gly Gly
65 70 75 80

Lys Gly Val Ala Thr Ala Leu Gly Val Leu Leu Ala Leu Ser Pro Ala
85 90 95

Thr Ala Leu Val Cys Ala Leu Ile Trp Leu Val Met Ala Phe Gly Phe
100 105 110

Lys Val Ser Ser Leu Ala Ala Leu Val Ala Thr Thr Ala Ala Pro Leu
115 120 125

Ala Ala Leu Phe Phe Met Pro His Thr Ser Trp Ile Phe Ala Thr Leu
130 135 140

Ala Ile Ala Ile Leu Val Leu Leu Arg His Lys Ser Asn Ile Leu Asn
145 150 155 160

Leu Ile Lys Gly Lys Glu Ser Lys Ile Gly Glu Lys Arg
165 170

<210> 1309

<211> 522

<212> DNA

<213> Neisseria meningitidis

<400> 1309

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gttttgctg caccgcgtgct tcaagaaccg ctgcgttat ccgcacagcgc aatcgccggcc 180
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tgggcgaccg tcgccattgc tttgctgggtt ttgttccgccc acaaaaagtaa tatcgtcaag 480
ctgctcgaag gcagagaaaag caaaatcgcc ggcagccgct ga 522

<210> 1310

<211> 173

<212> PRT

<213> Neisseria meningitidis

<400> 1310

Met Asp Asp Pro Arg Thr Tyr Gly Ser Gly Asn Pro Gly Ala Thr Asn
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Val Leu Arg Ser Gly Lys Lys Ala Ala Ala Leu Thr Leu Leu Gly
20 25 30

Asp Ala Ala Lys Gly Leu Val Ala Val Leu Leu Ala Arg Val Leu Gln
35 40 45

Glu Pro Leu Gly Leu Ser Asp Ser Ala Ile Ala Ala Val Ala Leu Ala
50 55 60

Ala Leu Val Gly His Met Trp Pro Val Phe Phe Gly Phe Lys Gly Gly
65 70 75 80

Lys Gly Val Ala Thr Ala Leu Gly Val Leu Leu Ala Leu Ser Pro Ala
85 90 95

Thr Ala Leu Val Cys Ala Leu Ile Trp Leu Val Met Ala Phe Gly Phe
100 105 110

Lys Val Ser Ser Leu Ala Ala Leu Thr Ala Thr Ile Ala Ala Pro Val
115 120 125

Ala Ala Ser Phe Phe Met Pro His Val Ser Trp Val Trp Ala Thr Val
130 135 140

Ala Ile Ala Leu Leu Val Leu Phe Arg His Lys Ser Asn Ile Val Lys
145 150 155 160

Leu Leu Glu Gly Arg Glu Ser Lys Ile Gly Gly Ser Arg
165 170

<210> 1311

<211> 522

<212> DNA

<213> Neisseria meningitidis

<400> 1311

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gttttgcggc cacgcgtgct tcaagaaccg ctgcgttat ccgcacagcgc aatcgccgc 180
gtgcgcactcg ccgcgtggc cggcatatg tggccgggt tttcggatt taaaggcggc 240
aaaggcgtgg caacggcatt gggcgtgctt ctggcactct ctccccacaac tgccttggtc 300
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accgcacaaa tcgcccggc cttggcgca ctgttttta tgccgcatac ttcttgatt 420
ttcgcaaccc tcgcaatcgc catattgggt ttgctccgcc ataagagcaa catcctcaac 480
ctgattaaag gcaaaagaaag caaaatcgcc gaaaaacgct ga 522

<210> 1312

<211> 173

<212> PRT

<213> Neisseria meningitidis

<400> 1312

Met Asp Asp Pro Arg Thr Tyr Gly Ser Gly Asn Pro Gly Ala Thr Asn
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Val Leu Arg Ser Gly Lys Lys Ala Ala Ala Leu Thr Leu Leu Gly
20 25 30

Asp Ala Ala Lys Gly Leu Val Ala Val Leu Leu Ala Arg Val Leu Gln
35 40 45

Glu Pro Leu Gly Leu Ser Asp Ser Ala Ile Ala Ala Val Ala Leu Ala
50 55 60

Ala Leu Val Gly His Met Trp Pro Val Phe Phe Gly Phe Lys Gly
65 70 75 80

Lys Gly Val Ala Thr Ala Leu Gly Val Leu Leu Ala Leu Ser Pro Thr
85 90 95

Thr Ala Leu Val Cys Ala Leu Ile Trp Leu Val Met Ala Phe Gly Phe
100 105 110

Lys Val Ser Ser Leu Ala Ala Leu Thr Ala Thr Ile Ala Ala Pro Leu
115 120 125

Ala Ala Leu Phe Phe Met Pro His Thr Ser Trp Ile Phe Ala Thr Leu

130

135

140

Ala Ile Ala Ile Leu Val Leu Leu Arg His Lys Ser Asn Ile Leu Asn
145 150 155 160

Leu Ile Lys Gly Lys Glu Ser Lys Ile Gly Glu Lys Arg
165 170

<210> 1313

<211> 612

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1313

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cagccggcgc cgggcgtaaa gccttacaat gcccgtcagg ttgccggacg cgatattac 180
atccgtgagg gctgttacaa ctgcccactct caaatgattc gtccgttccg tgcggaaacc 240
gagcggtacg gtcattactc tggccgggaa gagtcggttt acgaccatcc gttccaatgg 300
ggttccaaac gtaccggtcc tgatttgca cgtgtggcg gccgctattc cgacgaatgg 360
caccgcattcc acctgctgaa tccccgtgat gtcgtgcctg agtccaatat gccggcattc 420
ccgtggctt caccgcaataa agtcgatgtc gatgcaaccg ttgccaacat gaaggcttg 480
cgtaaagtag gtactccta cagtgtatgag gaaatgcga aagcgcctga ggcttggca 540
aacaaatccg agctggatgc tggtagtcgccc tatctgcaag gattgggtct ggcttggaaa 600
aacgttaaggt aa 612

<210> 1314

<211> 203

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1314

Met Lys Leu Gln Gln Leu Ala Glu Glu Lys Ile Gly Val Leu Ile Val
1 5 10 15

Phe Thr Leu Leu Val Val Ser Val Gly Leu Leu Ile Glu Val Val Pro
20 25 30

Leu Ala Phe Thr Lys Ala Ala Thr Gln Pro Ala Pro Gly Val Lys Pro
35 40 45

Tyr Asn Ala Leu Gln Val Ala Gly Arg Asp Ile Tyr Ile Arg Glu Gly
50 55 60

Cys Tyr Asn Cys His Ser Gln Met Ile Arg Pro Phe Arg Ala Glu Thr
65 70 75 80

Glu Arg Tyr Gly His Tyr Ser Val Ala Gly Glu Ser Val Tyr Asp His
85 90 95

Pro Phe Gln Trp Gly Ser Lys Arg Thr Gly Pro Asp Leu Ala Arg Val
100 105 110

Gly Gly Arg Tyr Ser Asp Glu Trp His Arg Ile His Leu Leu Asn Pro
115 120 125

Arg Asp Val Val Pro Glu Ser Asn Met Pro Ala Phe Pro Trp Leu Ala
130 135 140

Arg Asn Lys Val Asp Val Asp Ala Thr Val Ala Asn Met Lys Ala Leu
145 150 155 160

Arg Lys Val Gly Thr Pro Tyr Ser Asp Glu Glu Ile Ala Lys Ala Pro
165 170 175

Glu Ala Leu Ala Asn Lys Ser Glu Leu Asp Ala Val Val Ala Tyr Leu
180 185 190

Gln Gly Leu Gly Leu Ala Leu Lys Asn Val Arg
195 200

<210> 1315

<211> 612

<212> DNA

<213> Neisseria meningitidis

<400> 1315

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cagccggcgc cgggcggtgaa gccttacaat gcccgtcagg ttgccccggacg ccatattac 180
atccgtgagg gctgttacaa ctgccactcg caaatgattc gtccgttccg tgcgaaacc 240
gagcgttacg gtcattactc tggccggga gagtcgggtt acgaccatcc gttccaatgg 300
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caccgttatcc acctgtgtgaa tccccgtgat gtcgtgcctg agtccaatat gccggcattc 420
ccgtggctt cacgcaataa agtcgtatgtc gatcaaaccc ttgccaacat gaaggctttg 480
cgtaaagtag gtactccta cagtgtatgag gaaattgcga aagcacctga ggcttggca 540
aacaatccg agctggatgc tgtatcgcc tatctgcaag gattgggtct ggcttgaaa 600
aacgttaaggt aa 612

<210> 1316

<211> 203

<212> PRT

<213> Neisseria meningitidis.

<400> 1316

Met Lys Leu Gln Gln Leu Ala Glu Glu Lys Ile Gly Val Leu Ile Val
1 5 10 15

Phe Thr Leu Leu Val Val Ser Val Gly Leu Leu Ile Glu Val Val Pro
20 25 30

Leu Ala Phe Thr Lys Ala Ala Thr Gln Pro Ala Pro Gly Val Lys Pro
35 40 45

Tyr Asn Ala Leu Gln Val Ala Gly Arg Asp Ile Tyr Ile Arg Glu Gly
50 55 60

Cys Tyr Asn Cys His Ser Gln Met Ile Arg Pro Phe Arg Ala Glu Thr
65 70 75 80

Glu Arg Tyr Gly His Tyr Ser Val Ala Gly Glu Ser Val Tyr Asp His
85 90 95

Pro Phe Gln Trp Gly Ser Lys Arg Thr Gly Pro Asp Leu Ala Arg Val
100 105 110

Gly Gly Arg Tyr Ser Asp Glu Trp His Arg Ile His Leu Leu Asn Pro
115 120 125

Arg Asp Val Val Pro Glu Ser Asn Met Pro Ala Phe Pro Trp Leu Ala
130 135 140

Arg Asn Lys Val Asp Val Asp Ala Thr Val Ala Asn Met Lys Ala Leu
145 150 155 160

Arg Lys Val Gly Thr Pro Tyr Ser Asp Glu Glu Ile Ala Lys Ala Pro
165 170 175

Glu Ala Leu Ala Asn Lys Ser Glu Leu Asp Ala Val Val Ala Tyr Leu
180 185 190

Gln Gly Leu Gly Leu Ala Leu Lys Asn Val Arg
195 200

<210> 1317

<211> 612

<212> DNA

<213> Neisseria meningitidis

<400> 1317

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ccgtggcttgc caagcaataa agtcgatgtc gatgcaaccg ttgccaacat gaaggctttg 480
cgtaaagtag gtactcccta cagtgtatgg gaaattgcga aagcgcctga ggctttggca 540
aacaaatccg agctggatgc tggatcgcc tatctgcaag gattgggtct ggctttgaaa 600
aacgttaaggaa 612

<210> 1318

<211> 203

<212> PRT

<213> Neisseria meningitidis

<400> 1318

Met Lys Leu Gln Gln Leu Ala Glu Glu Lys Ile Gly Val Leu Ile Val
1 5 10 15

Phe Thr Leu Leu Val Val Ser Val Gly Leu Leu Ile Glu Val Val Pro
20 25 30

Leu Ala Phe Thr Lys Ala Ala Thr Gln Pro Ala Ser Gly Val Lys Pro

35	40	45
Tyr Asn Ala Leu Gln Val Ala Gly Arg Asp Ile Tyr Ile Arg Glu Gly		
50	55	60
Cys Tyr Asn Cys His Ser Gln Met Ile Arg Pro Phe Arg Ala Glu Thr		
65	70	75
Glu Arg Tyr Gly His Tyr Ser Val Ala Gly Glu Ser Val Tyr Asp His		
85	90	95
Pro Phe Gln Trp Gly Ser Lys Arg Thr Gly Pro Asp Leu Ala Arg Val		
100	105	110
Gly Gly Arg Tyr Ser Asp Glu Trp His Arg Ile His Leu Leu Asn Pro		
115	120	125
Arg Asp Val Val Pro Glu Ser Asn Met Pro Ala Phe Pro Trp Leu Ala		
130	135	140
Arg Asn Lys Val Asp Val Asp Ala Thr Val Ala Asn Met Lys Ala Leu		
145	150	160
Arg Lys Val Gly Thr Pro Tyr Ser Asp Glu Glu Ile Ala Lys Ala Pro		
165	170	175
Glu Ala Leu Ala Asn Lys Ser Glu Leu Asp Ala Val Val Ala Tyr Leu		
180	185	190
Gln Gly Leu Gly Leu Ala Leu Lys Asn Val Arg		
195	200	

<210> 1319
<211> 1494
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1319

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<210> 1320

<211> 497

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1320

Met Asp Met Val Asn Thr Lys Pro Asn Thr Ser Val Ile Asn Met Leu
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Ser Phe Leu Thr Gly Leu Leu Ser Leu Gly Ile Glu Val Leu Trp Val
20 25 30

Arg Met Phe Ser Phe Ala Ala Gln Ser Val Pro Gln Ala Phe Ser Phe
35 40 45

Ile Leu Ala Cys Phe Leu Thr Gly Ile Ala Val Gly Ala Tyr Phe Gly
50 55 60

Lys Arg Ile Cys Arg Ser Arg Phe Val Asp Ile Pro Phe Ile Gly Gln
65 70 75 80

Cys Phe Leu Trp Ala Gly Ile Ala Asp Phe Leu Ile Leu Gly Ala Ala
85 90 95

Trp Leu Leu Thr Gly Phe Ser Gly Phe Val His His Ala Gly Ile Phe
100 105 110

Ile Thr Leu Ser Ala Val Val Arg Gly Leu Ile Phe Pro Leu Val His
115 120 125

His Val Gly Thr Asp Gly Asn Lys Ser Gly Arg Gln Val Ser Asn Val
130 135 140

Tyr Phe Ala Asn Val Ala Gly Ser Ala Leu Gly Pro Val Leu Ile Gly
145 150 155 160

Phe Val Ile Leu Asp Leu Leu Ser Thr Gln Gln Ile Tyr Leu Leu Ile
165 170 175

Cys Leu Ile Ser Ala Ala Val Pro Leu Phe Cys Thr Leu Phe Gln Lys
180 185 190

Ser Leu Arg Leu Asn Ala Val Ser Val Ala Val Ser Leu Met Phe Gly
195 200 205

Ile Leu Met Phe Leu Leu Pro Asp Ser Val Phe Gln Asn Ile Ala Gly
210 215 220

Arg Pro Asp Arg Leu Ile Glu Asn Lys His Gly Ile Val Ala Val Tyr
225 230 235 240

His Arg Asp Gly Asp Lys Val Val Tyr Gly Ala Asn Val Tyr Asp Gly
245 250 255

Ala Tyr Asn Thr Asp Ile Phe Asn Ser Val Asn Gly Ile Glu Arg Ala
260 265 270

Tyr Leu Leu Pro Ser Leu Lys Ser Gly Ile Arg Arg Ile Phe Val Val
275 280 285

Gly Leu Ser Thr Gly Ser Trp Ala Arg Val Leu Ser Ala Ile Pro Glu
290 295 300

Met Gln Ser Met Ile Val Ala Glu Ile Asn Pro Ala Tyr Arg Ser Leu
305 310 315 320

Ile Ala Asp Glu Pro Gln Ile Ala Pro Leu Leu Gln Asp Lys Arg Val
325 330 335

Glu Ile Val Leu Asp Asp Gly Arg Lys Trp Leu Arg Arg His Pro Asp
340 345 350

Glu Lys Phe Asp Leu Ile Leu Met Asn Ser Thr Trp Tyr Trp Arg Ala
355 360 365

Tyr Ser Thr Asn Leu Leu Ser Ala Glu Phe Leu Lys Gln Val Gln Ser
370 375 380

His Leu Thr Pro Asp Gly Ile Val Met Phe Asn Thr Thr His Ser Pro
385 390 395 400

His Ala Phe Ala Thr Ala Val His Ser Ile Pro Tyr Ala Tyr Arg Tyr
405 410 415

Gly His Met Val Val Gly Ser Ala Thr Pro Val Val Phe Pro Asn Lys
420 425 430

Glu Leu Leu Lys Gln Arg Leu Ser Arg Leu Ile Trp Pro Glu Ser Gly
435 440 445

Arg His Val Phe Asp Ser Ser Thr Val Asp Ala Ala Gln Lys Val
450 455 460

Val Ser Arg Met Leu Ile Arg Met Thr Glu Pro Ser Ala Gly Ala Glu
465 470 475 480

Val Ile Thr Asp Asp Asn Met Ile Val Glu Tyr Lys Tyr Gly Arg Gly
485 490 495

Ile

<211> 1494
<212> DNA
<213> *Neisseria meningitidis*

<400> 1321
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gttagcaggTTt ccctaataatgtt cggcatctc atgttctyac tgccggatc tgcgtttcaa 660
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gttattaccg acgataatattt gattgttagaa tacaataacg gcagaggat taa 1494

<210> 1322
<211> 497
<212> PRT
<213> *Neisseria meningitidis*

<400> 1322
Met Asp Ile Val Asn Thr Lys Pro Asn Thr Ser Leu Ile Tyr Met Xaa
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Ser Phe Leu Ser Gly Leu Leu Ser Leu Gly Ile Glu Val Leu Trp Val
20 25 30

Arg Met Phe Ser Phe Ala Ala Gln Ser Val Pro Gln Ala Phe Ser Phe
35 40 45

Thr Leu Ala Cys Phe Leu Thr Gly Ile Ala Val Gly Ala Tyr Phe Gly
50 55 60

Lys Arg Ile Cys Arg Ser Arg Phe Val Asp Ile Pro Phe Ile Gly Gln
65 70 75 80

Cys Phe Leu Trp Ala Gly Ile Ala Asp Phe Leu Ile Leu Gly Ala Ala
85 90 95

Trp Leu Leu Thr Gly Phe Ser Gly Phe Val His His Ala Gly Ile Phe

	100	105	110
Ile Thr Leu Ser Ala Val Val Xaa Xaa Leu Ile Phe Pro Leu Val His			
115	120	125	
His Val Gly Thr Asp Gly Asn Lys Ser Gly Arg Gln Val Ser Asn Val			
130	135	140	
Tyr Phe Ala Xaa Val Ala Gly Ser Ala Leu Gly Pro Val Leu Ile Gly			
145	150	155	160
Phe Val Ile Leu Asp Phe Leu Ser Thr Gln Gln Ile Tyr Leu Leu Ile			
165	170	175	
Cys Xaa Ile Ser Ala Ala Val Pro Leu Phe Cys Thr Leu Phe Gln Lys			
180	185	190	
Ser Leu Arg Leu Asn Ala Val Ser Val Ala Val Ser Leu Met Phe Gly			
195	200	205	
Ile Leu Met Phe Leu Leu Pro Asp Ser Val Phe Gln Asn Ile Ala Asp			
210	215	220	
Arg Pro Asp Arg Leu Ile Glu Asn Lys His Gly Ile Val Ala Val Tyr			
225	230	235	240
His Arg Asp Gly Asp Lys Val Val Tyr Gly Ala Asn Val Tyr Asp Gly			
245	250	255	
Ala Tyr Asn Thr Asp Val Phe Asn Ser Val Asn Gly Ile Glu Arg Ala			
260	265	270	
Tyr Leu Leu Pro Ser Leu Lys Ser Gly Ile Arg Arg Ile Phe Val Val			
275	280	285	
Gly Leu Ser Thr Gly Ser Trp Ala Arg Val Leu Ser Ala Ile Pro Glu			
290	295	300	
Met Gln Ser Met Ile Val Ala Glu Ile Asn Pro Ala Tyr Arg Ser Leu			
305	310	315	320
Ile Ala Asp Glu Pro Gln Ile Ala Pro Leu Leu Gln Asp Lys Arg Val			
325	330	335	
Glu Ile Val Leu Asp Asp Gly Arg Lys Trp Leu Arg Arg His Pro Asp			
340	345	350	
Glu Lys Phe Asp Leu Ile Leu Met Asn Thr Thr Trp Tyr Trp Arg Ala			
355	360	365	
Tyr Ser Thr Asn Leu Leu Ser Ala Glu Phe Leu Lys Gln Val Gln Ser			
370	375	380	
His Leu Thr Pro Asp Gly Ile Val Met Phe Asn Thr Thr His Ser Pro			
385	390	395	400
His Ala Phe Ala Thr Ala Val His Ser Ile Pro Tyr Ala Tyr Arg Tyr			

405	410	415
Gly His Met Val Val Gly Ser Ala Thr Pro Val Val Phe Pro Asn Lys		
420	425	430
Glu Leu Leu Lys Gln Arg Leu Ser Arg Leu Ile Trp Pro Glu Ser Gly		
435	440	445
Arg His Val Phe Asp Ser Ser Thr Val Asp Ala Ala Ala Gln Lys Val		
450	455	460
Val Ser Arg Met Leu Ile Gln Met Thr Glu Pro Ser Ala Gly Ala Glu		
465	470	475
Val Ile Thr Asp Asp Asn Met Ile Val Glu Tyr Lys Tyr Gly Arg Gly		
485	490	495

Ile

<210> 1323
<211> 1494
<212> DNA
<213> Neisseria meningitidis

<400> 1323

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aatattgttcc accgtccgaa taggctgatt gaaaacaaac acggcatttttgcgttttac 720
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<210> 1324

<211> 497

<212> PRT

<213> Neisseria meningitidis

<400> 1324

Met Asp Ile Val Asn Thr Lys Pro Asn Thr Ser Leu Ile Tyr Met Leu
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Ser Phe Leu Ser Gly Leu Leu Ser Leu Gly Ile Glu Val Leu Trp Val
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Arg Met Phe Ser Phe Ala Ala Gln Ser Val Pro Gln Ala Phe Ser Phe
35 40 45

Thr Leu Ala Cys Phe Leu Thr Gly Ile Ala Val Gly Ala Tyr Phe Gly
50 55 60

Lys Arg Ile Cys Arg Ser Arg Phe Val Asp Ile Pro Phe Ile Gly Gln
65 70 75 80

Cys Phe Leu Trp Ala Gly Ile Ala Asp Phe Leu Ile Leu Gly Ala Ala
85 90 95

Trp Leu Leu Thr Gly Phe Ser Gly Phe Val His His Ala Gly Ile Phe
100 105 110

Ile Thr Leu Ser Ala Val Val Arg Gly Leu Ile Phe Pro Leu Val His
115 120 125

His Val Gly Thr Asp Gly Asn Lys Ser Gly Arg Gln Val Ser Asn Val
130 135 140

Tyr Phe Ala Asn Val Ala Gly Ser Ala Leu Gly Pro Val Leu Ile Gly
145 150 155 160

Phe Val Ile Leu Asp Phe Leu Ser Thr Gln Gln Ile Tyr Leu Leu Ile
165 170 175

Cys Leu Ile Ser Ala Ala Val Pro Leu Phe Cys Thr Leu Phe Gln Lys
180 185 190

Ser Leu Arg Leu Asn Ala Val Ser Val Ala Val Ser Leu Met Phe Gly
195 200 205

Ile Leu Met Phe Leu Leu Pro Asp Ser Val Phe Gln Asn Ile Ala Asp
210 215 220

Arg Pro Asp Arg Leu Ile Glu Asn Lys His Gly Ile Val Ala Val Tyr
225 230 235 240

His Arg Asp Gly Asp Lys Val Val Tyr Gly Ala Asn Val Tyr Asp Gly
245 250 255

Ala Tyr Asn Thr Asp Val Phe Asn Ser Val Asn Gly Ile Glu Arg Ala
260 265 270

Tyr Leu Leu Pro Ser Leu Lys Ser Gly Ile Arg Arg Ile Phe Val Val

275

280

285

Gly Leu Ser Thr Gly Ser Trp Ala Arg Val Leu Ser Ala Ile Pro Glu
290 295 300

Met Gln Ser Met Ile Val Ala Glu Ile Asn Pro Ala Tyr Arg Ser Leu
305 310 315 320

Ile Ala Asp Glu Pro Gln Ile Ala Pro Leu Leu Gln Asp Lys Arg Val
325 330 335

Glu Ile Val Leu Asp Asp Gly Arg Lys Trp Leu Arg Arg His Pro Asp
340 345 350

Glu Lys Phe Asp Leu Ile Leu Met Asn Thr Thr Trp Tyr Trp Arg Ala
355 360 365

Tyr Ser Thr Asn Leu Leu Ser Ala Glu Phe Leu Lys Gln Val Gln Ser
370 375 380

His Leu Thr Pro Asp Gly Ile Val Met Phe Asn Thr Thr His Ser Pro
385 390 395 400

His Ala Phe Ala Thr Ala Val His Ser Ile Pro Tyr Ala Tyr Arg Tyr
405 410 415

Gly His Met Val Val Gly Ser Ala Thr Pro Val Val Phe Pro Asn Lys
420 425 430

Glu Leu Leu Lys Gln Arg Leu Ser Arg Leu Ile Trp Pro Glu Ser Gly
435 440 445

Arg His Val Phe Asp Ser Ser Thr Val Asp Ala Ala Gln Lys Val
450 455 460

Val Ser Arg Met Leu Ile Gln Met Thr Glu Pro Ser Ala Gly Ala Glu
465 470 475 480

Val Ile Thr Asp Asp Asn Met Ile Val Glu Tyr Lys Tyr Gly Arg Gly
485 490 495

Ile

<210> 1325

<211> 963

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1325

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ggcccgata aagtaagcaa agaatcaaa ccgacggaag gattgatggt cgatttctcc 840
gatatccaac catacgccaa tcatacggtt aactccgccc catccgtaga ggctgataac 900
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tga 963

<210> 1326

<211> 320

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1326

Met Arg Ala Arg Leu Leu Ile Pro Ile Leu Phe Ser Val Phe Ile Leu
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Ser Ala Cys Gly Thr Leu Thr Gly Ile Pro Ser His Gly Gly Lys
20 25 30

Arg Phe Ala Val Glu Gln Glu Leu Val Ala Ala Ser Ala Arg Ala Ala
35 40 45

Val Lys Asp Met Asp Leu Gln Ala Leu His Gly Arg Lys Val Ala Leu
50 55 60

Tyr Ile Ala Thr Met Gly Asp Gln Gly Ser Gly Ser Leu Thr Gly Gly
65 70 75 80

Arg Tyr Ser Ile Asp Ala Leu Ile Arg Gly Glu Tyr Ile Asn Ser Pro
85 90 95

Ala Val Arg Thr Asp Tyr Thr Tyr Pro Arg Tyr Glu Thr Thr Ala Glu
100 105 110

Thr Thr Ser Gly Gly Leu Thr Gly Leu Thr Thr Ser Leu Ser Thr Leu
115 120 125

Asn Ala Pro Ala Leu Ser Arg Thr Gln Ser Asp Gly Ser Gly Ser Arg
130 135 140

Ser Ser Leu Gly Leu Asn Ile Gly Gly Met Gly Asp Tyr Arg Asn Glu
145 150 155 160

Thr Leu Thr Thr Asn Pro Arg Asp Thr Ala Phe Leu Ser His Leu Val
165 170 175

Gln Thr Val Phe Phe Leu Arg Gly Ile Asp Val Val Ser Pro Ala Asn
180 185 190

Ala Asp Thr Asp Val Phe Ile Asn Ile Asp Val Phe Gly Thr Ile Arg

195	200	205
Asn Arg Thr Glu Met His Leu Tyr Asn Ala Glu Thr Leu Lys Ala Gln		
210	215	220
Thr Lys Leu Glu Tyr Phe Ala Val Asp Arg Thr Asn Lys Lys Leu Leu		
225	230	235
Ile Lys Pro Lys Thr Asn Ala Phe Glu Ala Ala Tyr Lys Glu Asn Tyr		
245	250	255
Ala Leu Trp Met Gly Pro Tyr Lys Val Ser Lys Gly Ile Lys Pro Thr		
260	265	270
Glu Gly Leu Met Val Asp Phe Ser Asp Ile Gln Pro Tyr Gly Asn His		
275	280	285
Thr Gly Asn Ser Ala Pro Ser Val Glu Ala Asp Asn Ser His Glu Gly		
290	295	300
Tyr Gly Tyr Ser Asp Glu Ala Val Arg Gln His Arg Gln Gly Gln Pro		
305	310	315
		320

<210> 1327

<211> 963

<212> DNA

<213> Neisseria meningitidis

<400> 1327

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gtggccgctt ctgccagagc tgccgttaaa gacatggatt tacaggcatt acacggacga 180
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gatatccgac catacggcaa tcatacgggt aactccgccc catccgtaga ggctgataac 900
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<210> 1328

<211> 320

<212> PRT

<213> Neisseria meningitidis

<400> 1328
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Ser Ala Cys Gly Thr Leu Thr Gly Ile Pro Ser His Gly Gly Gly Lys
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Arg Phe Ala Val Glu Gln Glu Leu Val Ala Ala Ser Ala Arg Ala Ala
35 40 45
Val Lys Asp Met Asp Leu Gln Ala Leu His Gly Arg Lys Val Ala Leu
50 55 60
Tyr Ile Ala Thr Met Gly Asp Gln Gly Ser Gly Ser Leu Thr Gly Gly
65 70 75 80
Arg Tyr Ser Ile Asp Ala Leu Ile Arg Gly Glu Tyr Ile Asn Ser Pro
85 90 95
Ala Val Arg Thr Asp Tyr Thr Tyr Pro Arg Tyr Glu Thr Thr Ala Glu
100 105 110
Thr Thr Ser Gly Gly Leu Thr Gly Leu Thr Thr Ser Leu Ser Thr Leu
115 120 125
Asn Ala Pro Ala Leu Ser Arg Thr Gln Ser Asp Gly Ser Gly Ser Lys
130 135 140
Ser Ser Leu Gly Leu Asn Ile Gly Gly Met Gly Asp Tyr Arg Asn Glu
145 150 155 160
Thr Leu Thr Thr Asn Pro Arg Asp Thr Ala Phe Leu Ser His Leu Val
165 170 175
Gln Thr Val Phe Phe Leu Arg Gly Ile Asp Val Val Ser Pro Ala Asn
180 185 190
Ala Asp Thr Asp Val Phe Ile Asn Ile Asp Val Phe Gly Thr Ile Arg
195 200 205
Asn Arg Thr Glu Met His Leu Tyr Asn Ala Glu Thr Leu Lys Ala Gln
210 215 220
Thr Lys Leu Glu Tyr Phe Ala Val Asp Arg Thr Asn Lys Lys Leu Leu
225 230 235 240
Ile Lys Pro Lys Thr Asn Ala Phe Glu Ala Ala Tyr Lys Glu Asn Tyr
245 250 255
Ala Leu Trp Met Gly Pro Tyr Lys Val Ser Lys Gly Ile Lys Pro Thr
260 265 270
Glu Gly Leu Met Val Asp Phe Ser Asp Ile Arg Pro Tyr Gly Asn His
275 280 285
Thr Gly Asn Ser Ala Pro Ser Val Glu Ala Asp Asn Ser His Glu Gly

290

295

300

Tyr Gly Tyr Ser Asp Glu Val Val Arg Gln His Arg Gln Gly Gln Pro
305 310 315 320

<210> 1329

<211> 963

<212> DNA

<213> Neisseria meningitidis

<400> 1329

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tga 963

<210> 1330

<211> 320

<212> PRT

<213> Neisseria meningitidis

<400> 1330

Met Gln Ala Arg Leu Leu Ile Pro Ile Leu Phe Ser Val Phe Ile Leu
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Ser Ala Cys Gly Thr Leu Thr Gly Ile Pro Ser His Gly Gly Lys
20 25 30

Arg Phe Ala Val Glu Gln Glu Leu Val Ala Ala Ser Ala Arg Ala Ala
35 40 45

Val Lys Asp Met Asp Leu Gln Ala Leu His Gly Arg Lys Val Ala Leu
50 55 60

Tyr Ile Ala Thr Met Gly Asp Gln Gly Ser Gly Ser Leu Thr Gly Gly
65 70 75 80

Arg Tyr Ser Ile Asp Ala Leu Ile Arg Gly Glu Tyr Ile Asn Ser Pro
85 90 95

Ala Val Arg Thr Asp Tyr Thr Tyr Pro Arg Tyr Glu Thr Thr Ala Glu
100 105 110

Thr Thr Ser Gly Gly Leu Thr Gly Leu Thr Thr Ser Leu Ser Thr Leu
115 120 125

Asn Ala Pro Ala Leu Ser Arg Thr Gln Ser Asp Gly Ser Gly Ser Lys
130 135 140

Ser Ser Leu Gly Leu Asn Ile Gly Gly Met Gly Asp Tyr Arg Asn Glu
145 150 155 160

Thr Leu Thr Thr Asn Pro Arg Asp Thr Ala Phe Leu Ser His Leu Val
165 170 175

Gln Thr Val Phe Phe Leu Arg Gly Ile Asp Val Val Ser Pro Ala Asn
180 185 190

Ala Asp Thr Asp Val Phe Ile Asn Ile Asp Val Phe Gly Thr Ile Arg
195 200 205

Asn Arg Thr Glu Met His Leu Tyr Asn Ala Glu Thr Leu Lys Ala Gln
210 215 220

Thr Lys Leu Glu Tyr Phe Ala Val Asp Arg Thr Asn Lys Lys Leu Leu
225 230 235 240

Ile Lys Pro Lys Thr Asn Ala Phe Glu Ala Ala Tyr Lys Glu Asn Tyr
245 250 255

Ala Leu Trp Met Gly Pro Tyr Lys Val Ser Lys Gly Ile Lys Pro Thr
260 265 270

Glu Gly Leu Met Val Asp Phe Ser Asp Ile Gln Pro Tyr Gly Asn His
275 280 285

Met Gly Asn Ser Ala Pro Ser Val Glu Ala Asp Asn Ser His Glu Gly
290 295 300

Tyr Gly Tyr Ser Asp Glu Ala Val Arg Arg His Arg Gln Gly Gln Pro
305 310 315 320

<210> 1331
<211> 1677
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1331
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caagccgctg tctcggtcga ggccgaggtt cagctgggtc atgtcggtcg agccgatgga 180
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<210> 1332

<211> 558

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1332

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Ala Ala Gly Gly Asp Gly Lys Met Gln His His Phe Asp Gly Arg Val
 20 25 30

Ala Phe Val Lys Arg Phe Gly His Gln Ala Ala Val Ser Val Glu Ala
35 40 45

Glu Gly Gln Leu Gly His Val Val Arg Ala Asp Gly Glu Ala Val Glu
50 55 60

Val Leu Gln Glu Leu Phe Arg Gln Tyr Arg Val Ala Arg Gln Leu Ala

65 70 75 80

His His Asn Gln Ala Gln Ala Val Phe Ala Ala Phe Gln Ala Val Phe
85 90 95

Phe Gln Cys Leu Asn His Cys Phe Gly Phe Ala Gln Ser Ala Asp Glu
 100 105 110

Arg Asn His Asp Phe Asp Val Gly Gln Thr His Phe Val Thr Asn Ala
115 120 125

Phe Gln Gly Phe Ala Phe Gln Gly Glu Thr Val Phe Glu Ala Leu Gly
130 135 140

Asn Ile Thr Arg Arg Thr Thr Glu Ala Gln His Arg Val Phe Phe Met
145 150 155 160

Arg Phe Val Tyr Ala Ala Ala Asp Gln Val Gly Val Phe Val Gly Phe
165 170 175

Glu Val Gly His Thr Asp Asp Gly Phe Thr Arg Ile Asn Arg Cys Gly
180 185 190

Lys Arg Cys His Ala Phe Gly Asp Phe Ile Asp Val Glu Val Asp Arg
195 200 205

Gly Cys Val Thr Gly Asp Ala Ala Asp Asn Phe Arg Phe Gln Phe Val
210 215 220

Val Leu Phe Val Lys Phe Gln Gln Gly Phe Arg Val Asp Ala Asp Leu
225 230 235 240

Ala Val Asp Asp Lys Phe His Thr Arg Gln Ala Asp Ala Phe Ala Gly
245 250 255

Gln Ile Gly Glu Ala Glu Cys Glu Phe Gly Ile Ala Asp Val His His
260 265 270

Asp Phe Asp Gly Cys Phe Trp His Ile Val Gln Gly Asp Ile Gly Asn
275 280 285

Leu Tyr Val Gln Gln Ala Gly Ile Asp Lys Ala Gly Ile Ala Phe Gly
290 295 300

Thr Gly Tyr Gly Asn Phe Leu Thr Val Phe Gln Glu Phe Gly Arg Ile
305 310 315 320

Ala Ala Ala Asp Asp Gly Arg Asn Thr Gln Phe Ala Arg Asp Asp Gly
325 330 335

Gly Val Ala Gly Ala Ser Ala Ala Val Gly His Asp Gly Gly Ser Thr
340 345 350

Phe His His Gly Phe Pro Ile Arg Ile Gly His Val Gly Asn Gln Tyr
355 360 365

Val Ala Gly Phe Asp Gly Ile His Leu Gly Ser Ile Phe Asn Gln Ala
370 375 380

His Leu Ala Leu Thr Asp Phe Leu Thr Asp Gly Thr Thr Phe Ala Gln
385 390 395 400

Asp Gly Phe Phe Ala Val Asp Gly Val Ala Ala Gln Val Ala Ala Ala
405 410 415

Phe Phe Leu Gly Phe Asp Gly Phe Gly Ala Gly Leu Gln Asp Val Glu
420 425 430

Phe Ala Val Gln Ala Val Ala Ser Pro Phe Asp Ile His Arg Ala Ala
 435 440 445
 Val Val Phe Phe Asp Gly Gln Arg Val Val Cys Gln Leu Gly Asp Phe
 450 455 460
 Phe Val Gly Asn Gly Glu Ala Val Ala Val Phe Phe Gly Asp Phe Asp
 465 470 475 480
 Val Gly Tyr Arg Phe Ala Gly Phe Gly Phe Val Gly Glu Asn His Phe
 485 490 495
 Asp Val Phe Arg Thr His Gly Leu Ala Gln Asp Gly Gly Phe Ala Cys
 500 505 510
 Phe Glu Arg Gly Phe Glu His Ile Lys Phe Val Arg Val Asp Arg Ala
 515 520 525
 Leu Tyr Asp Val Phe Ala Gln Thr Val Arg Gly Gly Asn Lys Asp Asp
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 Leu Val Val Ala Gly Phe Gly Val Glu Gly Glu His His Thr
 545 550 555

<210> 1333
 <211> 1677
 <212> DNA
 <213> Neisseria meningitidis

<400> 1333
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 caagccgctg tcgcggctga gaccgagggt cagttgggtc atgtcggtcg agccgatgg 180
 gaagccgtcg aagtattgca gaaattgttc cgccaatacc gcgttgcgtcg gcagctcgca 240
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 gacaacggmt tcggcttcgc ccaaagtgcg gacgaacgg 360
 caaccccccatt tcatcgcgga cgcgtttcaa ggcttgcatt tccaaggcga aacagtcttt 420
 gaagttgtcg ggcacataaac ggcgcgcacc acggaagccc aacatcggtt tttcttcatt 480
 cggttcgat acgttgcgc cgaccagggt ggcgtattcg ttggatttga agtcggacat 540
 acggacgatg gtttacgcg gataaaccga tgcggccaat gtcgccacgc cttcggcgat 600
 tttatcgacg tagaagtgcg caggggacgc gtaacggcg atacggcggg taattccgc 660
 ttttaattcg tcgtttgtt tgtcaaattc caacaargct ttgggggttga taccgatttgc 720
 gcggttgatg ataaattcca tacgcgc当地 gccgatgcct tcgctggca ggttggcgaa 780
 gctgaatgcg agttcggtt tgccgacgtt catcatgact tttacagggtt cttaggcatt 840
 attgtctaag ggcacatcggt taatctgtac gtccaaacaga cccgcataaga taaagccgt 900
 atcgccctcg gcacaggata cggtaacttc ttgacgcgtt ttcagcaatt cggttgcatt 960
 gccgcaggccg acaacggcag gaatgccc当地 ttcacgcgcg atgatggcgg cgtggcagg 1020
 acggccgc当地 cgggttggtaa cgtatggcaga agcacgttcc atcacgggtt cccaatccgg 1080
 atcggtcatg tcggtaacga gtacgtcgcc ggcttcgcacg gaatccatct cggaaacatc 1140
 tttaatcagg cgcacattgc cctgaccgc当地 ttgttgc当地 atggcgc当地 cttcgc当地 1200
 tacgggttttgc当地 tcggcgttgc当地 tggcgaaggc ggcgcagggtt cgggttgc当地 cttcgc当地 1260
 ttttacgggt tcgggacggg cttgcaggat gtagagtttgc当地 ccgttccaaagc cgtcgc当地 1320
 ccattcgata tccatcgggc ggcgc当地 tagtgc当地 ttttcgatg gtcagtc当地 gtc当地 1380
 ctcagtaatt tcttcgtcg当地 taatgggagaa ggcgc当地 tagtgc当地 ttttc当地 cttcgc当地 1440
 gttgggttacg gatttacggg cttctgc当地 ttgttgc当地 gtc当地 gtc当地 aatgc当地 1500
 accccatgggtt acgc当地 cagga tggcggc当地 gccc当地 gytttgc当地 agcgc当地 ggggttgc当地 tgaacacatc当地 1560

aaattcgcc gggttgaccg caccttgtac gacgtttcg cccagaccgt aagaggaggt 1620
aacaagacg acytgatcgt akccggattc ggtgtcgagg gtgaacatca caccta 1677

<210> 1334

<211> 558

<212> PRT

<213> Neisseria meningitidis

<400> 1334

Met Val Gly Xaa Ala Leu Thr Ala Asp Ala Asp Ile Phe Val Leu Leu
1 5 10 15

Ala Ala Gly Gly Asp Gly Lys Val Gln His His Phe Asp Gly Arg Val
20 25 30

Ala Phe Val Lys Arg Phe Gly Tyr Gln Ala Ala Val Ala Val Glu Thr
35 40 45

Glu Gly Gln Leu Gly His Val Val Arg Ala Asp Gly Glu Ala Val Glu
50 55 60

Val Leu Gln Glu Leu Phe Arg Gln Tyr Arg Val Ala Arg Gln Leu Ala
65 70 75 80

His His Asn Gln Ala Gln Ala Val Phe Ala Ala Phe Gln Ala Val Phe
85 90 95

Phe Gln Gly Phe Asp Asn Gly Phe Gly Phe Ala Gln Ser Ala Asp Glu
100 105 110

Arg Asn His Asp Phe Asn Val Gly Gln Pro His Phe Ile Ala Asp Ala
115 120 125

Phe Gln Gly Phe Ala Phe Gln Gly Glu Thr Val Phe Glu Val Val Gly
130 135 140

Asp Ile Thr Arg Arg Thr Thr Glu Ala Gln His Arg Val Phe Phe Met
145 150 155 160

Arg Phe Val Tyr Val Ala Ala Asp Gln Val Gly Val Phe Val Gly Phe
165 170 175

Glu Val Gly His Thr Asp Asp Gly Phe Thr Arg Ile Asn Arg Cys Gly
180 185 190

Gln Cys Arg His Ala Phe Gly Asp Phe Ile Asp Val Glu Val Asp Arg
195 200 205

Gly Arg Val Thr Gly Asp Thr Ala Gly Asn Phe Arg Phe Xaa Phe Val
210 215 220

Val Leu Phe Val Lys Phe Gln Gln Xaa Phe Gly Val Asp Thr Asp Leu
225 230 235 240

Ala Val Asp Asp Lys Phe His Thr Arg Gln Ala Asp Ala Phe Ala Gly

245	250	255
Gln Val Gly Glu Ala Glu Cys Glu Phe Gly Ile Ala Asp Val His His		
260	265	270
Asp Phe Tyr Arg Cys Phe Arg His Ile Val Xaa Gly Asp Ile Gly Asn		
275	280	285
Leu Tyr Val Gln Gln Thr Gly Ile Asp Lys Ala Gly Ile Ala Phe Gly		
290	295	300
Thr Gly Tyr Gly Asn Phe Leu Thr Val Phe Gln Gln Phe Gly Cys Ile		
305	310	320
Ala Ala Ala Asp Asn Gly Arg Asn Ala Gln Phe Thr Arg Asp Asp Gly		
325	330	335
Gly Val Ala Gly Thr Ala Ala Ala Val Gly Asn Asp Gly Arg Ser Thr		
340	345	350
Phe His His Gly Phe Pro Ile Arg Ile Gly His Val Gly Asn Glu Tyr		
355	360	365
Val Ala Gly Phe Asp Gly Ile His Leu Gly Ser Ile Phe Asn Gln Ala		
370	375	380
His Leu Ala Leu Thr Asp Phe Leu Thr Asp Gly Ala Ala Phe Ala Xaa		
385	390	400
Tyr Gly Phe Val Ala Val Asp Gly Glu Ala Ala Gln Val Ala Val Ala		
405	410	415
Leu Phe Leu Gly Phe Tyr Gly Phe Gly Thr Gly Leu Gln Asp Val Glu		
420	425	430
Phe Ala Val Gln Ala Val Ala Ser Pro Phe Asp Ile His Arg Ala Ala		
435	440	445
Val Val Phe Phe Asp Gly Gln Cys Val Met Arg Gln Leu Ser Asn Phe		
450	455	460
Phe Val Gly Asn Gly Glu Ala Val Ala Val Phe Leu Gly Asp Ile Asp		
465	470	475
480		
Val Gly Tyr Gly Phe Thr Gly Phe Cys Phe Val Gly Lys Asn His Phe		
485	490	495
Asp Val Phe Xaa Thr His Gly Phe Thr Gln Asp Gly Gly Leu Ala Arg		
500	505	510
Phe Glu Arg Gly Phe Glu His Xaa Lys Phe Val Arg Val Asp Arg Thr		
515	520	525
Leu Tyr Asp Val Phe Ala Gln Thr Val Arg Gly Gly Asn Lys Asp Asp		
530	535	540

Leu Ile Val Xaa Gly Phe Gly Val Glu Gly Glu His His Thr
545 550 555

<210> 1335
<211> 1671
<212> DNA
<213> Neisseria meningitidis

<400> 1335
atggtcggac gggccttgac cgcatatgcc gacatatttgc ttctgcttgc ggcaggcgga 60
gatggcaagg tgcagcatca ctttgacggc agggttgcgt tcgtcaaacc attcgatac 120
caagccgtcg tcgcggtcga gaccgaggtt cagttggtc atgtcggtcg agccgatgg 180
gaagccgtcg aagtatttgc gaaatttgc cgcataacc gcgttgcgtcg gcagctcgca 240
catcataatc aggccgcaggc cggttttgc gcgttccaag cctttttttt tcagggcttt 300
gacaacggct tggcgttcgc ccaaagtgcg gacgaacgg 540
aaccacccatt tcatcgccgaa cgcgtttcat tccaaggcgaa aacagtcttt 420
gaagttgtcg ggcacataac ggcgcgcacc acggaagccc aacatcggtt tttcttcatg 480
cggttcgtat acgttgcgcg cggcagggtt ggcgttgcgtt tggttgcgtt agtcggacat 540
acggacgtg gtttacgcg gataaaccgc tgccgcacat gtcgcacgc cttcgccat 600
tttatcgacg tagaagtgcg caggggacgc gtaaccggcg atacggcg 660
tttaatttgc tcgtcttgcgtt tgtcaaatc caacaaggct ttgggttgcg taccgatttgc 720
gcgggttgcgt ataaattcca tacgcgcggc gccgatgcct tcgctggcga ggttggcgaa 780
gctgaatgcg agttcggat tgccgacgtt catcatgact tttacagggtt cttaggcatt 840
gttgtccaaa gcaacatcggtt taatttgcgtt gtccagcagg ccggagtaga tgaaggcggt 900
atcgcccttcg gcacaggata cggtaacttc ttgaccgtt ttcagcaatt cggttgcatt 960
gccgcagccg acaacggcag gaataaccgcg ttcgcgcgcg atgatggcggtt cgtggcagg 1020
acgtccgccc ctgttgcgttca cgtggcgaa agcgcgtttc atcaccgggtt cccaatctgg 1080
gtcggtcatg tccgttacca gtaatcgccg ggcttcgcgtt gaaatccatctt cggaagcatc 1140
ttaatcagg cgtacccgttgc cctgaccgcac tttctgcgtt atggcgccgc cttcgccacaa 1200
gacgggtttt tccgttgcgttgcgtt tagaaaaggcg ggcgcagggtt cggctgcctt cttccgttgcgtt 1260
tttgcgttgcgtt tccgttgcgttgcgtt gtagagtttgcgtt ccgttccaaagc cgtcgccgttcc 1320
ccattcgatg tccatcgccg ggcgcgttgcgtt ttttcgttgcgtt gtcgttgcgtt aatgcgcacaa 1380
ctcggttgcgtt tccatcgccg ttttcgttgcgtt gtcgttgcgtt gtcgttgcgtt aatgcgcacaa 1440
gttgcgttgcgtt gtttgcgttgcgtt gtcgttgcgtt gtcgttgcgtt gtcgttgcgtt aatgcgcacaa 1500
gccccatgggtt ttgcgcaggat tggcagggtt gtcgttgcgtt gtcgttgcgtt gtcgttgcgtt aatgcgcacaa 1560
gaaattcgatg ggatttgcgttgcgtt gtcgttgcgtt gtcgttgcgtt gtcgttgcgtt gtcgttgcgtt aatgcgcacaa 1620
gacaaagacg acttggcgttgcgtt gtcgttgcgtt gtcgttgcgtt gtcgttgcgtt gtcgttgcgtt aatgcgcacaa 1671

<210> 1336
<211> 554
<212> PRT
<213> Neisseria meningitidis

<400> 1336
Met Val Gly Arg Ala Leu Thr Ala Asp Ala Asp Ile Phe Val Leu Leu
1 5 10 15

Ala Ala Gly Gly Asp Gly Lys Val Gln His His Phe Asp Gly Arg Val
20 25 30

Ala Phe Val Lys Arg Phe Gly Tyr Gln Ala Ala Val Ala Val Glu Thr
35 40 45

Glu Gly Gln Leu Gly His Val Val Arg Ala Asp Gly Glu Ala Val Glu
50 55 60

Val Leu Gln Glu Leu Phe Arg Gln Tyr Arg Val Ala Arg Gln Leu Ala
65 70 75 80

His His Asn Gln Ala Gln Ala Val Phe Ala Ala Phe Gln Ala Val Phe
85 90 95

Phe Gln Gly Phe Asp Asn Gly Phe Gly Phe Ala Gln Ser Ala Asp Glu
100 105 110

Arg Asn His Asp Phe Asn Val Gly Gln Pro His Phe Ile Ala Asp Ala
115 120 125

Phe Gln Gly Phe Ala Phe Gln Gly Glu Thr Val Phe Glu Val Val Gly
130 135 140

Asp Ile Thr Arg Arg Thr Thr Glu Ala Gln His Arg Val Phe Phe Met
145 150 155 160

Arg Phe Val Tyr Val Ala Ala Asp Gln Val Gly Val Phe Val Gly Phe
165 170 175

Glu Val Gly His Thr Asp Asp Gly Phe Thr Arg Ile Asn Arg Cys Gly
180 185 190

Gln Cys Arg His Ala Phe Gly Asp Phe Ile Asp Val Glu Val Asp Arg
195 200 205

Gly Arg Val Thr Gly Asp Thr Ala Gly Asn Phe Arg Phe Phe Val Val
210 215 220

Leu Phe Val Lys Phe Gln Gln Gly Phe Gly Val Asp Thr Asp Leu Ala
225 230 235 240

Val Asp Asp Lys Phe His Thr Arg Gln Ala Asp Ala Phe Ala Gly Gln
245 250 255

Val Gly Glu Ala Glu Cys Glu Phe Gly Ile Ala Asp Val His His Asp
260 265 270

Phe Tyr Arg Cys Phe Arg His Val Val Gln Ser Asn Ile Gly Asn Leu
275 280 285

Tyr Val Gln Gln Ala Gly Val Asp Glu Ala Gly Ile Ala Phe Gly Thr
290 295 300

Gly Tyr Gly Asn Phe Leu Thr Val Phe Gln Gln Phe Gly Cys Ile Ala
305 310 315 320

Ala Ala Asp Asn Gly Arg Asn Thr Gln Phe Ala Arg Asp Asp Gly Gly
325 330 335

Val Ala Gly Thr Ser Ala Pro Val Gly His Asp Gly Gly Ser Ala Phe
340 345 350

His His Arg Phe Pro Ile Trp Val Gly His Val Gly Asn Gln Tyr Val
355 360 365

Ala Gly Phe Asp Gly Ile His Leu Gly Ser Ile Phe Asn Gln Ala Tyr
 370 375 380
 Leu Ala Leu Thr Asp Phe Leu Thr Asp Gly Ala Ala Phe Ala Gln Asp
 385 390 395 400
 Gly Phe Phe Ala Val Asp Arg Lys Ala Ala Gln Val Ala Ala Ala Phe
 405 410 415
 Phe Leu Gly Phe Asp Gly Phe Gly Thr Gly Leu Gln Asp Val Glu Phe
 420 425 430
 Ala Val Gln Ala Val Ala Ser Pro Phe Asp Val His Arg Ala Ala Val
 435 440 445
 Val Phe Phe Asp Gly Gln Cys Val Met Arg Gln Leu Gly Asp Phe Phe
 450 455 460
 Val Gly Asn Gly Glu Ala Val Ala Val Phe Phe Gly Asp Ile Asp Val
 465 470 475 480
 Gly Tyr Arg Phe Ala Gly Phe Cys Phe Val Gly Lys Asn His Phe Asp
 485 490 495
 Val Phe Ala His Gly Phe Ala Gln Asp Gly Arg Phe Ala Cys Phe Gln
 500 505 510
 Arg Gly Phe Glu His Ile Glu Phe Val Gly Ile Asp Cys Ala Leu Tyr
 515 520 525
 Asp Val Phe Ala Gln Thr Val Gly Ser Asp Lys Asp Asp Leu Val Val
 530 535 540
 Thr Gly Phe Gly Ile Glu Gly Glu His His
 545 550

<210> 1337
 <211> 507
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1337
 atgatgaaac cgccacaacct gttccattc ctgcgggtt gtcctgtac cgtcggcg 60
 gttccgcac aggcggggcgc gttggacgcg ctaagcaat tcaacaacga tgccgacgg 120
 atcagcggca gttcaccca accgtccaa agcaaaaaga aaacccaaac cgccacggc 180
 acgttcaaaa tcctgcgccc gggcctttc aaatggaaat acactttgcc ctacagacag 240
 actattgtcg gcgacggtca acccggttg ctctacgtt tgatttggc acaagtgacc 300
 aagtgtccc aagaccaggc catcgccggc agccccggc ccattctgtc gaacaaaacc 360
 gcccctgaaa gcagtacac gctgaaagag gacggttcgt ccaacggcat cgattatgtg 420
 cggggcaacg cccaaacgca acaacgccc ctaccaatac atccgcatcg gttcaaagg 480
 cggcaacctc gccgccatgc agcttaa 507

<210> 1338
 <211> 168

<212> PRT

<213> *Neisseria gonorrhoeae*

<400> 1338

Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
1 5 10 15

Thr Val Ala Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
20 25 30

Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Thr
35 40 45

Val Gln Ser Lys Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
50 55 60

Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Leu Pro Tyr Arg Gln
65 70 75 80

Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu

Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Gly Ser Pro
100 105 110

Ala Ala Ile Leu Ser Asn Lys Thr Ala Leu Glu Ser Ser Tyr Thr Leu
 115 120 125

Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Arg Gly Asn Ala
130 135 140

Gln Thr Gln Gln Arg Arg Leu Pro Ile His Pro His Arg Leu Gln Arg
145 150 155 160

Arg Gln Pro Arg Arg His Ala Ala
165

<210> 1339

<211> 503

<212> DNA

<213> Neisseria meningitidis

<400> 1339

atgtatgaaac cgccacaacct gttccaattc ctgcggcggtt gtcgcctgac cgtcgccgtc 60
gcttccgcac aggccggcgcc ggttagacgcg cttaaagcaat tcaacaacga tgccgacgg 120
atcagcggca gttcacccaa amccgtccaa wgcaaaaaaa aaacccaaact cgcgcacggc 180
acgttcaaaa tcctgcgacc gggccctttc aatgggaat acacccaaact tacaggcaaa 240
ccatcgtcgg cgacggtaaa acygtttggc tmtacgatgt ygatctggca caagtgacca 300
agtcgtccca agaccaggcc ataggcgsca gccccggccgc catcctgtcg aacaaarccg 360
ccctcgaaag cagctacacg ctgaaagagg acgggtcgac caacggcatc gattatgtgg 420
gcaacgccc aacgcaacaa cgccggctac caatacatcc gcatcggtt caaaggccgc 480
aacctcgccg ccatgcagct yaa 503

<210> 1340

<211> 168
<212> PRT
<213> Neisseria meningitidis

<400> 1340
Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
1 5 10 15

Thr Val Ala Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
20 25 30

Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Xaa
35 40 45

Val Gln Xaa Lys Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
50 55 60

Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Lys Leu Tyr Arg Gln
65 70 75 80

Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu
85 90 95

Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Xaa Ser Pro
100 105 110

Ala Ala Ile Leu Ser Asn Lys Xaa Ala Leu Glu Ser Ser Tyr Thr Leu
115 120 125

Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Gly Asn Ala Gln
130 135 140

Thr Gln Gln Arg Arg Leu Pro Ile His Pro His Arg Leu Gln Arg Arg
145 150 155 160

Gln Pro Arg Arg His Ala Ala Xaa
165

<210> 1341
<211> 504
<212> DNA
<213> Neisseria meningitidis

<400> 1341
atgatgaaac cgacaaacct gttccattc ctgcgggtt gctccctgac cgtctccgtc 60
gcttcggcac aggcgggcgc ggtggacgcg ctcaagcaat tcaacaacga tgccgacgg 120
atcagcggca gcttcaccca aaccgtccaa agcaaaaaga aaacccaaac cgcgcacggc 180
acgttcaaaa tcctgcgccc gggcctttt aaatggaat acacttcgccc ttacaaacag 240
actattgtcg gcgacggtaa aaccgtttgg ctctacgatg tcgatttggc acaagtgacc 300
aagtctcccc aagaccaggc cataggcggc agccccggcc ccattctgtc gaacaaaacc 360
gccctcgaaa gcagctacac gctgaaagag gacggttcg ccaacggcat cgattatgtg 420
ggcaacgccc aaacgcaaca acgccggcta ccaatacatc cgcacatcggt tcaaaggcgg 480
caacctcgcc gccatgcagc ttaa 504

<210> 1342

<211> 167
<212> PRT
<213> Neisseria meningitidis

<400> 1342

Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
1 5 10 15

Thr Val Ser Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
20 25 30

Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Thr
35 40 45

Val Gln Ser Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
50 55 60

Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Ser Pro Tyr Lys Gln
65 70 75 80

Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu
85 90 95

Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Gly Ser Pro
100 105 110

Ala Ala Ile Leu Ser Asn Lys Thr Ala Leu Glu Ser Ser Tyr Thr Leu
115 120 125

Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Gly Asn Ala Gln
130 135 140

Thr Gln Gln Arg Arg Leu Pro Ile His Pro His Arg Leu Gln Arg Arg
145 150 155 160

Gln Pro Arg Arg His Ala Ala
165

<210> 1343
<211> 624
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1343

atgatgaaac cgcacaaacct gttccaattc ctgcgggtt gctccctgac cgtcgccgtc 60
gcttcggcac aggcggggcgc ggtggacgcg ctcaagcaat tcaacaacga tgccgacgg 120
atcagcggca gcttcaccca aaccgtccaa agcaaaaaga aaacccaaac cgccgacggc 180
acgttcaaaa tcctgcgccc gggcctttc aaatggaaat acactttgcc ctacagacag 240
actattgtcg gcgacggtca aaccgtttgg ctctacgatg ttgatttggc acaagtgacc 300
aagtctgtccc aagaccaggc catcgccggc agccccggcc ccattctgtc gaacaaaacc 360
gccctcgaaa gcagttacac gctgaaaagag gacggttcgt ccaacggcat cgattatgtg 420
cgggcaacgc ccaaacgcaa caacgcccggc tccaataca tccgcattcgg cttcaaaggc 480
ggcaacctcg ccgccatgca gcttaaagac agcttcggca accaaacctc catcagttc 540
ggcggtttga ataccaatcc ccaactctcg cgcggcgcgt tcaagttac cccgccccaa 600
ggcgtggacg tggtgagcaa ctga 624

<210> 1344
<211> 207
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1344
Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
1 5 10 15

Thr Val Ala Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
20 25 30

Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Thr
35 40 45

Val Gln Ser Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
50 55 60

Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Leu Pro Tyr Arg Gln
65 70 75 80

Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu
85 90 95

Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Gly Ser Pro
100 105 110

Ala Ala Ile Leu Ser Asn Lys Thr Ala Leu Glu Ser Ser Tyr Thr Leu
115 120 125

Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Arg Ala Thr Pro
130 135 140

Lys Arg Asn Asn Ala Gly Tyr Gln Tyr Ile Arg Ile Gly Phe Lys Gly
145 150 155 160

Gly Asn Leu Ala Ala Met Gln Leu Lys Asp Ser Phe Gly Asn Gln Thr
165 170 175

Ser Ile Ser Phe Gly Gly Leu Asn Thr Asn Pro Gln Leu Ser Arg Gly
180 185 190

Ala Phe Lys Phe Thr Pro Pro Lys Gly Val Asp Val Leu Ser Asn
195 200 205

<210> 1345
<211> 624
<212> DNA
<213> Neisseria meningitidis

<400> 1345
atgatgaaac cgacacaacct gttccaaattc ctgcgggtt gctccctgac cgtcgccgtc 60
gcttcggcac aggcgggcgc ggttagacgcg cttaaagcaat tcaacaacga tgccgacgg 120
atcagcggca gcttcaccca aaccgtccaa agcaaaaaga aaacccaaac cgcgcacggc 180
acgttcaaaa tcctgcgacc gggcctttc aatggaaat acaccaaacc ttacaggcaa 240

accatcgtcg gcgacggtca aaccgtttgg ctctacgatg ttgatctggc acaagtgacc 300
aagtgcgtccc aagaccaggc cataggcggc agccccggc ccattcctgtc gaacaaaacc 360
gccctcgaaa gcagctacac gctgaaagag gacggttcg ccaacggcat cgattatgtg 420
ctggcaacgc ccaaaccgaa caacgcccggc tccaataca tccgcacatcg 480
ggcaacctcg ccgccccatgca gcttaaagac agcttcggca accaaacctc catcagttc 540
ggcggttga ataccaatcc ccaactctcg cgcggcgcgt tcaagttac cccgccccaaa 600
ggcgtggacg tggtgagcaa ctga 624

<210> 1346

<211> 207

<212> PRT

<213> Neisseria meningitidis

<400> 1346

Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
1 5 10 15

Thr Val Ala Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
20 25 30

Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Thr
35 40 45

Val Gln Ser Lys Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
50 55 60

Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Lys Pro Tyr Arg Gln
65 70 75 80

Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu
85 90 95

Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Gly Ser Pro
100 105 110

Ala Ala Ile Leu Ser Asn Lys Thr Ala Leu Glu Ser Ser Tyr Thr Leu
115 120 125

Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Leu Ala Thr Pro
130 135 140

Lys Arg Asn Asn Ala Gly Tyr Gln Tyr Ile Arg Ile Gly Phe Lys Gly
145 150 155 160

Gly Asn Leu Ala Ala Met Gln Leu Lys Asp Ser Phe Gly Asn Gln Thr
165 170 175

Ser Ile Ser Phe Gly Gly Leu Asn Thr Asn Pro Gln Leu Ser Arg Gly
180 185 190

Ala Phe Lys Phe Thr Pro Pro Lys Gly Val Asp Val Leu Ser Asn
195 200 205

<210> 1347

<211> 624

<212> DNA

<213> Neisseria meningitidis

<400> 1347

atgatgaaac cgccacaacct gttccaattc ctgcgcgtt gctccctgac cgtctccgtc 60
gcttcgcac aggcccgcg cggacgcg ctcaagcaat tcaacaacga tgccgacggt 120
atcagcggca gcttcaccca aaccgtccaa agcaaaaaga aaacccaaac cgccgacggc 180
acgttcaaaa tcctgcgccc gggcctcttt aaatggaaat acacttcgcc ttacaaacag 240
actattgtcg gcgcacgtca aaccgtttgg ctctacgatg tcgatttggc acaagtgacc 300
aagtctgtccc aagaccaggc cataggcggc agccccggc ccatacgtc gaacaaaacc 360
gccctcgaaa gcagctacac gctgaaagag gacgggtcg ccaacggcat cgattatgtg 420
ctggcaacgc ccaaacgcaa caacgcggc tccaataca tccgcattcg cttcaaaggc 480
ggcaacctcg ccgcattgcg gcttaaagac agcttcggca atcaaaccctc catcagtttc 540
ggcggttga ataccaatcc ccaactctcg cgccgcgcgt tcaagttac cccgccccaa 600
ggcgtggacg tggtgagcaa ctga 624

<210> 1348

<211> 207

<212> PRT

<213> Neisseria meningitidis

<400> 1348

Met Met Lys Pro His Asn Leu Phe Gln Phe Leu Ala Val Cys Ser Leu
1 5 10 15

Thr Val Ser Val Ala Ser Ala Gln Ala Gly Ala Val Asp Ala Leu Lys
20 25 30

Gln Phe Asn Asn Asp Ala Asp Gly Ile Ser Gly Ser Phe Thr Gln Thr
35 40 45

Val Gln Ser Lys Lys Thr Gln Thr Ala His Gly Thr Phe Lys Ile
50 55 60

Leu Arg Pro Gly Leu Phe Lys Trp Glu Tyr Thr Ser Pro Tyr Lys Gln
65 70 75 80

Thr Ile Val Gly Asp Gly Gln Thr Val Trp Leu Tyr Asp Val Asp Leu
85 90 95

Ala Gln Val Thr Lys Ser Ser Gln Asp Gln Ala Ile Gly Gly Ser Pro
100 105 110

Ala Ala Ile Leu Ser Asn Lys Thr Ala Leu Glu Ser Ser Tyr Thr Leu
115 120 125

Lys Glu Asp Gly Ser Ser Asn Gly Ile Asp Tyr Val Leu Ala Thr Pro
130 135 140

Lys Arg Asn Asn Ala Gly Tyr Gln Tyr Ile Arg Ile Gly Phe Lys Gly
145 150 155 160

Gly Asn Leu Ala Ala Met Gln Leu Lys Asp Ser Phe Gly Asn Gln Thr
165 170 175

Ser Ile Ser Phe Gly Gly Leu Asn Thr Asn Pro Gln Leu Ser Arg Gly

180 185 190

Ala Phe Lys Phe Thr Pro Pro Lys Gly Val Asp Val Leu Ser Asn
195 200 205

<210> 1349
<211> 207
<212> DNA
<213> Neisseria gonorrhoeae

<400> 1349
atgtccgcgc cgtcggcatc ggtaatcatt ttgttccatg ccgcttcgat ttcggcatcg 60
agctgttcgg ggaaggcgt gtccaaaatc cattggcgga tttcttgcc gacgcgtgcc 120
agttcggaaa cgtcttcgac atccaatttt gccagagcgg cggaaatgcg ttcgttcaga 180
ccgttgtgtg cgagaaatgc gcggtag 207

<210> 1350
<211> 68
<212> PRT
<213> Neisseria gonorrhoeae

<400> 1350
Met Ser Ala Pro Ser Ala Ser Val Ile Ile Leu Phe His Ala Ala Ser
1 5 10 15

Ile Ser Ala Ser Ser Cys Ser Gly Lys Gly Val Ser Lys Ile His Trp
20 25 30

Arg Ile Ser Leu Pro Thr Arg Ala Ser Ser Glu Thr Ser Ser Thr Ser
35 40 45

Asn Phe Ala Arg Ala Ala Glu Met Arg Ser Phe Arg Pro Leu Cys Ala
50 55 60

Arg Asn Ala Arg
65

<210> 1351
<211> 207
<212> DNA
<213> Neisseria meningitidis

<400> 1351
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agctgttcgg ggaaggcgt atccaaaatc cattggcgga tttcttgcc gacgcgtgcc 120
agttcggcaa cgtcttcgac atccaatttt gccagtgcgg cggaaatgcn ttcgttcaga 180
ccgttgtgtg cgagaaatgc gcggtag 207

<210> 1352
<211> 68
<212> PRT
<213> Neisseria meningitidis

<400> 1352
Met Ser Ala Pro Pro Ala Ser Ala Thr Ile Leu Phe His Ala Ala Ser
1 5 10 15

Ile Ser Ala Ser Ser Cys Ser Gly Lys Gly Val Ser Lys Ile His Trp
20 25 30

Arg Ile Ser Leu Pro Thr Arg Ala Ser Ser Ala Thr Ser Ser Thr Ser
35 40 45

Asn Phe Ala Ser Ala Ala Glu Met Arg Ser Leu Arg Pro Leu Cys Ala
50 55 60

Arg Asn Ala Arg
65

<210> 1353
<211> 207
<212> DNA
<213> Neisseria meningitidis

<400> 1353
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agctgttcgg ggaagggcgt gtccaaaatc cattggcgga tttctttgcc gacgcgtgcc 120
agttcggcaa cgtcttcgac atctaattttt gccagtgcgg cgaaatgcg ttgcgtcaga 180
ccgttgtgtgcgaggaatgcg gccgttag 207

<210> 1354
<211> 207
<212> PRT
<213> Neisseria meningitidis

<400> 1354
Ala Thr Gly Thr Cys Cys Gly Cys Cys Cys Cys Cys Gly Gly
1 5 10 15

Cys Ala Thr Cys Gly Gly Cys Ala Ala Cys Cys Ala Thr Thr Thr Thr
20 25 30

Gly Thr Thr Cys Cys Ala Thr Gly Cys Cys Gly Cys Thr Thr Cys Gly
35 40 45

Ala Thr Thr Thr Cys Gly Gly Cys Ala Thr Cys Gly Ala Gly Cys Thr
50 55 60

Gly Thr Thr Cys Gly Gly Gly Ala Ala Gly Gly Gly Cys Gly Thr
65 70 75 80

Gly Thr Cys Cys Ala Ala Ala Ala Thr Cys Cys Ala Thr Thr Gly Gly
85 90 95

Cys Gly Gly Ala Thr Thr Cys Thr Thr Gly Cys Cys Gly Ala
100 105 110

Cys Gly Cys Gly Thr Gly Cys Cys Ala Gly Thr Thr Cys Gly Gly Cys

115	120	125
Ala Ala Cys Gly Thr Cys Thr Thr Cys Gly Ala Cys Ala Thr Cys Thr		
130	135	140
Ala Ala Thr Thr Thr Gly Cys Cys Ala Gly Thr Gly Cys Gly Gly		
145	150	160
Cys Gly Gly Ala Ala Ala Thr Gly Cys Gly Thr Thr Cys Gly Cys Thr		
165	170	175
Cys Ala Gly Ala Cys Cys Gly Thr Thr Gly Thr Gly Thr Gly Cys Gly		
180	185	190
Ala Gly Gly Ala Ala Thr Gly Cys Gly Cys Gly Gly Thr Ala Gly		
195	200	205

<210> 1355

<211> 360

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1355

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aagccattga tattcaggaa ggttcctgt tggccggcaa atgatgcgtc gggcaggct 120
tcggcgggttgcgaaagagcg tacggcaacg gaaatgtccg cgccgtcggc atcgttaatc 180
attttgttcc atgcccgttc gatttcggca tcgagctgtt cggggaaaggc cgtgtccaaa 240
atccattggc ggatttctt gccgacgcgt gccagttcgg aaacgtctc gacatccaat 300
tttgccagag cggcggaaat gcgttcgttcc agaccgttgt gtgcgagaaa tgccgcggtag 360
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<210> 1356

<211> 119

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1356

Met Ala Arg Ser Leu Tyr Arg Glu Ala Lys Thr Trp Arg Ile Ala Phe		
1	5	10
		15

Leu Thr Leu Ser Lys Pro Leu Ile Phe Arg Lys Val Ser Cys Trp Pro		
20	25	30

Ala Asn Asp Ala Ser Gly Arg Ser Ser Ala Val Ala Glu Glu Arg Thr		
35	40	45

Ala Thr Glu Met Ser Ala Pro Ser Ala Ser Val Ile Ile Leu Phe His		
50	55	60

Ala Ala Ser Ile Ser Ala Ser Ser Cys Ser Gly Lys Gly Val Ser Lys		
65	70	75
		80

Ile His Trp Arg Ile Ser Leu Pro Thr Arg Ala Ser Ser Glu Thr Ser		
85	90	95

Ser Thr Ser Asn Phe Ala Arg Ala Ala Glu Met Arg Ser Phe Arg Pro
100 105 110

Leu Cys Ala Arg Asn Ala Arg
115

<210> 1357
<211> 360
<212> DNA
<213> Neisseria meningitidis

<400> 1357
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aagccgttga tttcaagaa gtttcctgttgtccagcga atgatgcgtc cggcaggct 120
tcggcagttcggaagaacgtacggcaacg gaaatgtccg caccgccggc atcggcaacc 180
atttgttcc atgcgcgttc gatttcggca tcgagctgtt cggggaaagg cgtatccaa 240
atccattggc ggatttctt gccgacgcgt gccagtcgg caacgtctc gacatccaa 300
tttgccagtg cggcggaaat gcgttcgctc agaccgttgt gtgcgagggaa tgccggtag 360

<210> 1358
<211> 119
<212> PRT
<213> Neisseria meningitidis

<400> 1358
Met Ala Arg Ser Leu Tyr Arg Glu Ala Asn Thr Trp Cys Ile Ala Ser
1 5 10 15

Leu Thr Leu Ser Lys Pro Leu Met Phe Lys Lys Val Ser Cys Cys Pro
20 25 30

Ala Asn Asp Ala Ser Gly Arg Ser Ser Ala Val Ala Glu Glu Arg Thr
35 40 45

Ala Thr Glu Met Ser Ala Pro Pro Ala Ser Ala Thr Ile Leu Phe His
50 55 60

Ala Ala Ser Ile Ser Ala Ser Ser Cys Ser Gly Lys Gly Val Ser Lys
65 70 75 80

Ile His Trp Arg Ile Ser Leu Pro Thr Arg Ala Ser Ser Ala Thr Ser
85 90 95

Ser Thr Ser Asn Phe Ala Ser Ala Ala Glu Met Arg Ser Leu Arg Pro
100 105 110

Leu Cys Ala Arg Asn Ala Arg
115

<210> 1359
<211> 360
<212> DNA
<213> Neisseria meningitidis

<400> 1359
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tcggcggttgcgaaagacg tacggcaacg gaaatgtccg cgccgcccgc atcgcaacc 180
attttgttcc atgccgttc gatttcggca tcgactgtt cggggaaaggc cgtgtccaaa 240
atccattggc ggatttctt gccgacgcgt gccagttcgg caacgtctc gacatcta 300
tttgccagtg cggcgaaat gcgttcgtc agaccgttgcgt gtcgagggaa tgccggtag 360

<210> 1360

<211> 119

<212> PRT

<213> Neisseria meningitidis

<400> 1360

Met Ala Arg Ser Leu Tyr Arg Glu Ala Asn Thr Trp Arg Ile Ala Ser
1 5 10 15

Leu Thr Phe Ser Lys Pro Leu Ile Phe Arg Lys Val Ser Cys Trp Pro
20 25 30

Ala Asn Asp Ala Ser Gly Arg Ser Ser Ala Val Ala Glu Glu Arg Thr
35 40 45

Ala Thr Glu Met Ser Ala Pro Pro Ala Ser Ala Thr Ile Leu Phe His
50 55 60

Ala Ala Ser Ile Ser Ala Ser Ser Cys Ser Gly Lys Gly Val Ser Lys
65 70 75 80

Ile His Trp Arg Ile Ser Leu Pro Thr Arg Ala Ser Ser Ala Thr Ser
85 90 95

Ser Thr Ser Asn Phe Ala Ser Ala Ala Glu Met Arg Ser Leu Arg Pro
100 105 110

Leu Cys Ala Arg Asn Ala Arg
115

<210> 1361

<211> 1278

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1361

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aatacgggtta tgccgcgcga ttttgcgcgt gatattgaag taacggacaa ggcaaccgg 120
gagaaactcg agcgcaccat ccgcgtgaac catccttga cttgcacgg catcacgatt 180
tatcaggcga gtttgccga cggcggttcg gatggacat tcaaggcgtg gaatttgagg 240
gatgcttcgc gcgaacctgt ctgttgaag gcaacctcca tacaccagg tccgttggaa 300
atcggcaaac acaaataatcg tcttgagttc gatcaattca cttctatgaa tgtggaggac 360
atgagcgagg gtgcggAACG ggaaaaaaAGC ctgaaatcca ctctgaacga tgtccgcgc 420
gttactcagg aaggtaaaaa atacaccaat atcgccccctt ccatcgtgtc ccgcattccgt 480
gatgcggcag ggcaggcggt cgaatataaa aactatatgc tgccgatttt gcaggacaaa 540
gattatTTT ggctgaccgg cacgcgcagc ggcttgcagc agcaataccg ctggctgcgt 600
atccccttgg acaagcagtt gaaagcggac acctttatgg cattgcgtga gttttgaaa 660

gatggggaaag ggcgcaaacg tctgggtgcc gacgcaacca aagacgcacc tgccgaaatc 720
cgcgaacaat tcatgtggc tgccgaaaac acgctgaata tctttgcgc aaaaaggctat 780
ttgggattgg acgaatttat tacgtccaat atcccgaaag ggcagcagga taagatgcag 840
ggctatttct acgaaatgct ttacggcgtg atgaacgctg ctttggatga aaccatacgc 900
cggtacggct tgcccaatg gcagcaggat gaagcgcgga accgtttcct gctgcacagt 960
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cgggcgtggg tatttttc aaacdgc当地 atccgttttgcgtt ctatgtcttc gccccgcagc 1200
gaacgggatt tgcagaagga atttccaaaaa cacgtcgaga gcctgcaacg gctcggcaag 1260
gacttgaatc atgactga 1278

<210> 1362

<211> 424

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1362

Met Leu Val Gln Asp Leu Pro Phe Glu Val Lys Leu Lys Lys Phe His
1 5 10 15

Ile Asp Phe Tyr Asn Thr Gly Met Pro Arg Asp Phe Ala Ser Asp Ile
20 25 30

Glu Val Thr Asp Lys Ala Thr Gly Glu Lys Leu Glu Arg Thr Ile Arg
35 40 45

Val Asn His Pro Leu Thr Leu His Gly Ile Thr Ile Tyr Gln Ala Ser
50 55 60

Phe Ala Asp Gly .Gly Ser Asp Leu Thr Phe Lys Ala Trp Asn Leu Arg
65 70 75 80

Asp Ala Ser Arg Glu Pro Val Val Leu Lys Ala Thr Ser Ile His Gln
85 90 95

Phe Pro Leu Glu Ile Gly Lys His Lys Tyr Arg Leu Glu Phe Asp Gln
100 105 110

Phe Thr Ser Met Asn Val Glu Asp Met Ser Glu Gly Ala Glu Arg Glu
115 120 125

Lys Ser Leu Lys Ser Thr Leu Asn Asp Val Arg Ala Val Thr Gln Glu
130 135 140

Gly Lys Lys Tyr Thr Asn Ile Gly Pro Ser Ile Val Tyr Arg Ile Arg
145 150 155 160

Asp Ala Ala Gly Gln Ala Val Glu Tyr Lys Asn Tyr Met Leu Pro Ile
165 170 175

Leu Gln Asp Lys Asp Tyr Phe Trp Leu Thr Gly Thr Arg Ser Gly Leu
180 185 190

Gln Gln Gln Tyr Arg Trp Leu Arg Ile Pro Leu Asp Lys Gln Leu Lys

195	200	205
Ala Asp Thr Phe Met Ala Leu Arg Glu Phe Leu Lys Asp Gly Glu Gly		
210	215	220
Arg Lys Arg Leu Val Ala Asp Ala Thr Lys Asp Ala Pro Ala Glu Ile		
225	230	240
Arg Glu Gln Phe Met Leu Ala Ala Glu Asn Thr Leu Asn Ile Phe Ala		
245	250	255
Gln Lys Gly Tyr Leu Gly Leu Asp Glu Phe Ile Thr Ser Asn Ile Pro		
260	265	270
Lys Gly Gln Gln Asp Lys Met Gln Gly Tyr Phe Tyr Glu Met Leu Tyr		
275	280	285
Gly Val Met Asn Ala Ala Leu Asp Glu Thr Ile Arg Arg Tyr Gly Leu		
290	295	300
Pro Glu Trp Gln Gln Asp Glu Ala Arg Asn Arg Phe Leu Leu His Ser		
305	310	320
Met Asp Ala Tyr Thr Gly Leu Thr Glu Tyr Pro Ala Pro Met Leu Leu		
325	330	335
Gln Leu Asp Gly Phe Ser Glu Val Arg Ser Ser Gly Leu Gln Met Thr		
340	345	350
Arg Ser Pro Gly Ala Leu Leu Val Tyr Leu Gly Ser Val Leu Leu Val		
355	360	365
Leu Gly Thr Val Phe Met Phe Tyr Val Pro Lys Lys Arg Ala Trp Val		
370	375	380
Leu Phe Ser Asn Lys Ile Arg Phe Ala Met Ser Ser Ala Arg Ser Glu		
385	390	400
Arg Asp Leu Gln Lys Glu Phe Pro Lys His Val Glu Ser Leu Gln Arg		
405	410	415
Leu Gly Lys Asp Leu Asn His Asp		
420		

<210> 1363
 <211> 1274
 <212> DNA
 <213> Neisseria meningitidis

<400> 1363
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 gagaaaactcg agcgcaccat ccgcgtgaac catccttga cttgcacgg catcacgatt 180
 tatcaggcga gtttgcgca cggcggttcg gatttgacat tcaaggcgtg gaatttgggt 240
 gatgcttcgc gcgagcctgt cgtgttgaag gcaacatcca tacaccagt tccgttgaa 300
 attggcaaac acaaataatcg tcttgagttc gatcagttca cttctatgaa tgtggaggac 360

atgagcgagg ggcggaaacg ggaaaaatcca cgctgmmcga tgcgtccgc 420
tttactcagg aaggtaaaaa atacaccaat atccggccctt ccattgttta ccgtatccgt 480
gatgcggcag ggcaggcgt cgaatataaa aactatatgc tgccggttt gcaggaacag 540
gattatttt ggattaccgg cacgcgcagc ggcttcgcagc agcaataccg ctggctgcgt 600
atccccttgg acaagcagt gaaagcggac accttatgg cattgcgtga gtttgaaa 660
gatgggaaag ggcgcaaacg tctgggtgcc gacgcaacca aaggcgcacc tgccgaaatc 720
cgcgaacaat tcatgttgc tgccggaaac acgctgaaca tctttgcaca aaaaggctat 780
ttgggattgg acgaatttat tacgtccaat atcccggaaag agcagcagga taagatgcag 840
ggctatttct acgaaatgt ttacggcgt atgaacgctg ctttggatga aaccatacgc 900
cggtacggct tgccggaaatg gcagcaggat gaagcgcggc atcggttcct gctgcacagt 960
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cggggcgtggg tatttttc agacggcaaa atccgttttgc ccatgtcttc ggcccgcagc 1200
gaacgggatt tgcagaagga atttccaaaaa cacgtcgaga gtctgcaacg gctcgcaag 1260
gacttgaatc atga 1274

<210> 1364

<211> 425

<212> PRT

<213> Neisseria meningitidis

<400> 1364

Ile Leu Val Gln Asp Leu Pro Phe Glu Val Lys Leu Lys Lys Phe His
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Ile Asp Phe Tyr Asn Thr Gly Met Pro Arg Asp Phe Ala Ser Asp Ile
20 25 30

Glu Val Thr Asp Lys Ala Thr Gly Glu Lys Leu Glu Arg Thr Ile Arg
35 40 45

Val Asn His Pro Leu Thr Leu His Gly Ile Thr Ile Tyr Gln Ala Ser
50 55 60

Phe Ala Asp Gly Gly Ser Asp Leu Thr Phe Lys Ala Trp Asn Leu Gly
65 70 75 80

Asp Ala Ser Arg Glu Pro Val Val Leu Lys Ala Thr Ser Ile His Gln
85 90 95

Phe Pro Leu Glu Ile Gly Lys His Lys Tyr Arg Leu Glu Phe Asp Gln
100 105 110

Phe Thr Ser Met Asn Val Glu Asp Met Ser Glu Gly Ala Glu Arg Glu
115 120 125

Lys Ser Leu Lys Ser Thr Leu Xaa Asp Val Arg Ala Val Thr Gln Glu
130 135 140

Gly Lys Lys Tyr Thr Asn Ile Gly Pro Ser Ile Val Tyr Arg Ile Arg
145 150 155 160

Asp Ala Ala Gly Gln Ala Val Glu Tyr Lys Asn Tyr Met Leu Pro Val
165 170 175

Leu Gln Glu Gln Asp Tyr Phe Trp Ile Thr Gly Thr Arg Ser Gly Leu
180 185 190

Gln Gln Gln Tyr Arg Trp Leu Arg Ile Pro Leu Asp Lys Gln Leu Lys
195 200 205

Ala Asp Thr Phe Met Ala Leu Arg Glu Phe Leu Lys Asp Gly Glu Gly
210 215 220

Arg Lys Arg Leu Val Ala Asp Ala Thr Lys Gly Ala Pro Ala Glu Ile
225 230 235 240

Arg Glu Gln Phe Met Leu Ala Ala Glu Asn Thr Leu Asn Ile Phe Ala
245 250 255

Gln Lys Gly Tyr Leu Gly Leu Asp Glu Phe Ile Thr Ser Asn Ile Pro
260 265 270

Lys Glu Gln Gln Asp Lys Met Gln Gly Tyr Phe Tyr Glu Met Leu Tyr
275 280 285

Gly Val Met Asn Ala Ala Leu Asp Glu Thr Ile Arg Arg Tyr Gly Leu
290 295 300

Pro Glu Trp Gln Gln Asp Glu Ala Arg Asn Arg Phe Leu Leu His Ser
305 310 315 320

Met Asp Ala Tyr Thr Gly Leu Thr Glu Tyr Pro Ala Pro Met Leu Leu
325 330 335

Gln Leu Asp Gly Phe Ser Glu Val Arg Ser Ser Gly Leu Gln Met Thr
340 345 350

Arg Ser Pro Gly Ala Leu Leu Val Tyr Leu Gly Ser Val Leu Leu Val
355 360 365

Leu Gly Thr Val Leu Met Phe Tyr Val Arg Glu Lys Arg Ala Trp Val
370 375 380

Leu Phe Ser Asp Gly Lys Ile Arg Phe Ala Met Ser Ser Ala Arg Ser
385 390 395 400

Glu Arg Asp Leu Gln Lys Glu Phe Pro Lys His Val Glu Ser Leu Gln
405 410 415

Arg Leu Gly Lys Asp Leu Asn His Asp
420 425

<210> 1365

<211> 1278

<212> DNA

<213> Neisseria meningitidis

<400> 1365

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aatacggta tgccgcgca ttttgccagt gatattgaag taacggataa ggcaaccggt 120

gagaaactcg agcgacccat ccgcgtgaac catccttga cctgcacgg catcacgatt 180
 tatcaggcga gttttccga cggcggttcg gattgacat tcaaggcgtg gaattgggt 240
 gatgcttcgc gcgagccgtc cgtgttgaag gcaacatcca tacaccagt tccgttgaa 300
 attggcaaac acaaataatcg tcttgagttc gatcaattta cttctatgaa tgtggaggac 360
 atgagcgagg gcgcggaacg gaaaaaaagc ctgaaatcca cgctgaacga tgtccgcgc 420
 gttactcagg aaggtaaaaa atacaccaat atcggccctt ccattgttta ccgtatccgt 480
 gatgcggcag ggcaggcgtt cgaatataaa aactatatgc tgccgggtt gcaggaacag 540
 gattatttt ggattaccgg cacgcgcagc ggcttgcagc agcaataccg ctggctgcgt 600
 atccccctgg acaagcagtt gaaagcggac acctttatgg cattgcgtga gttttgaaa 660
 gatgggaaag ggcgcaaacg tctgggtgcc gacgcaacca aaggcgcacc tgccgaaatc 720
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 ttgggattgg acgaatttat tacgtccaat atcccggaaag agcagcagga taagatgcag 840
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 cggtagcgt tgcccaatg gcagcaggat gaagcgcgga atcgtttcct gctgcacagt 960
 atggatgcgt acacgggtt gaccgaatat cccgcgccta tgctgctgca acttgatggg 1020
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 cgggcgtggg tatttttc agacggcaaa atccgttttgc catgtcttc ggccgcagc 1200
 gaacgggatt tgcagaagga atttccaaaa cacgtcgaga gtctgcaacg gctcggcaag 1260
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<210> 1366

<211> 425

<212> PRT

<213> Neisseria meningitidis

<400> 1366

Ile	Leu	Val	Gln	Asp	Leu	Pro	Phe	Glu	Val	Lys	Leu	Lys	Lys	Phe	His
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Ile	Asp	Phe	Tyr	Asn	Thr	Gly	Met	Pro	Arg	Asp	Phe	Ala	Ser	Asp	Ile
							20					25			30

Glu	Val	Thr	Asp	Lys	Ala	Thr	Gly	Glu	Lys	Leu	Glu	Arg	Thr	Ile	Arg
							35					40			45

Val	Asn	His	Pro	Leu	Thr	Leu	His	Gly	Ile	Thr	Ile	Tyr	Gln	Ala	Ser
							50				55			60	

Phe	Ala	Asp	Gly	Gly	Ser	Asp	Leu	Thr	Phe	Lys	Ala	Trp	Asn	Leu	Gly
							65				70		75		80

Asp	Ala	Ser	Arg	Glu	Pro	Val	Val	Leu	Lys	Ala	Thr	Ser	Ile	His	Gln
							85				90			95	

Phe	Pro	Leu	Glu	Ile	Gly	Lys	His	Lys	Tyr	Arg	Leu	Glu	Phe	Asp	Gln
							100				105			110	

Phe	Thr	Ser	Met	Asn	Val	Glu	Asp	Met	Ser	Glu	Gly	Ala	Glu	Arg	Glu
							115				120		125		

Lys	Ser	Leu	Lys	Ser	Thr	Leu	Asn	Asp	Val	Arg	Ala	Val	Thr	Gln	Glu
							130				135			140	

Gly	Lys	Lys	Tyr	Thr	Asn	Ile	Gly	Pro	Ser	Ile	Val	Tyr	Arg	Ile	Arg
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

145	150	155	160
Asp Ala Ala Gly Gln Ala Val Glu Tyr Lys Asn Tyr Met Leu Pro Val			
165	170	175	
Leu Gln Glu Gln Asp Tyr Phe Trp Ile Thr Gly Thr Arg Ser Gly Leu			
180	185	190	
Gln Gln Gln Tyr Arg Trp Leu Arg Ile Pro Leu Asp Lys Gln Leu Lys			
195	200	205	
Ala Asp Thr Phe Met Ala Leu Arg Glu Phe Leu Lys Asp Gly Glu Gly			
210	215	220	
Arg Lys Arg Leu Val Ala Asp Ala Thr Lys Gly Ala Pro Ala Glu Ile			
225	230	235	240
Arg Glu Gln Phe Met Leu Ala Ala Glu Asn Thr Leu Asn Ile Phe Ala			
245	250	255	
Gln Lys Gly Tyr Leu Gly Leu Asp Glu Phe Ile Thr Ser Asn Ile Pro			
260	265	270	
Lys Glu Gln Gln Asp Lys Met Gln Gly Tyr Phe Tyr Glu Met Leu Tyr			
275	280	285	
Gly Val Met Asn Ala Ala Leu Asp Glu Thr Ile Arg Arg Tyr Gly Leu			
290	295	300	
Pro Glu Trp Gln Gln Asp Glu Ala Arg Asn Arg Phe Leu Leu His Ser			
305	310	315	320
Met Asp Ala Tyr Thr Gly Leu Thr Glu Tyr Pro Ala Pro Met Leu Leu			
325	330	335	
Gln Leu Asp Gly Phe Ser Glu Val Arg Ser Ser Gly Leu Gln Met Thr			
340	345	350	
Arg Ser Pro Gly Ala Leu Leu Val Tyr Leu Gly Ser Val Leu Leu Val			
355	360	365	
Leu Gly Thr Val Leu Met Phe Tyr Val Arg Glu Lys Arg Ala Trp Val			
370	375	380	
Leu Phe Ser Asp Gly Lys Ile Arg Phe Ala Met Ser Ser Ala Arg Ser			
385	390	395	400
Glu Arg Asp Leu Gln Lys Glu Phe Pro Lys His Val Glu Ser Leu Gln			
405	410	415	
Arg Leu Gly Lys Asp Leu Asn His Asp			
420	425		

<210> 1367

<211> 894

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1367

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cagcttccgt tccacctgac cgccatgtac aagccgcga aaatcaaagc gatagacaaa 480
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tgcaacgccc tgccgacgg acaaaggcttc gtgtgcaca tccgcggcgtt ccaaggggaa 780
ttgaacggca acaaagccca cgatgcccgc gtgttcaacc gcaataccga atattggata 840
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<210> 1368

<211> 297

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1368

Met Phe Arg Leu Gln Phe Arg Leu Phe Pro Pro Leu Arg Thr Ala Met
1 5 10 15

His Ile Leu Leu Thr Ala Leu Leu Lys Cys Leu Ser Leu Ser Leu
20 25 30

Ser Cys Leu His Thr Leu Gly Asn Arg Leu Gly His Leu Ala Phe Tyr
35 40 45

Leu Leu Lys Glu Asp Arg Ala Arg Ile Val Ala Asn Met Arg Gln Ala
50 55 60

Gly Leu Asn Pro Asp Thr Gln Thr Val Lys Ala Val Phe Ala Glu Thr
65 70 75 80

Ala Lys Cys Gly Leu Glu Leu Ala Pro Ala Phe Phe Lys Lys Pro Glu
85 90 95

Asp Ile Glu Thr Met Phe Lys Ala Val His Gly Trp Glu His Val Gln
100 105 110

Gln Ala Leu Asp Lys Gly Glu Gly Leu Leu Phe Ile Thr Pro His Ile
115 120 125

Gly Ser Tyr Asp Leu Gly Gly Arg Tyr Ile Ser Gln Gln Leu Pro Phe
130 135 140

His Leu Thr Ala Met Tyr Lys Pro Pro Lys Ile Lys Ala Ile Asp Lys
145 150 155 160

Ile Met Gln Ala Gly Arg Val Arg Gly Lys Gly Lys Thr Ala Pro Thr
 165 170 175
 Gly Ile Gln Gly Val Lys Gln Ile Ile Lys Ala Leu Arg Ala Gly Glu
 180 185 190
 Ala Thr Ile Ile Leu Pro Asp His Val Pro Ser Pro Gln Glu Gly Gly
 195 200 205
 Gly Val Trp Ala Asp Phe Phe Gly Lys Pro Ala Tyr Thr Met Thr Leu
 210 215 220
 Ala Ala Lys Leu Ala His Val Lys Gly Val Lys Thr Leu Phe Phe Cys
 225 230 235 240
 Cys Glu Arg Leu Pro Asp Gly Gln Gly Phe Val Leu His Ile Arg Pro
 245 250 255
 Val Gln Gly Glu Leu Asn Gly Asn Lys Ala His Asp Ala Ala Val Phe
 260 265 270
 Asn Arg Asn Thr Glu Tyr Trp Ile Arg Arg Phe Pro Thr Gln Tyr Leu
 275 280 285
 Phe Met Tyr Asn Arg Tyr Lys Thr Pro
 290 295

<210> 1369
 <211> 866
 <212> DNA
 <213> Neisseria meningitidis

<400> 1369
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 aaccggctcg gacatctggc gtttacatt ttaaaggaag accgcgcgcg catgtcgcc 180
 aatatgcggc aggcgggtt gaaccccgac cccaaaacgg tcaaagccgt ttttgcggaa 240
 acggcaaaag gcggttttga acttgcccccc gcgttttca gaaaaccgga agacatagaa 300
 acaatgttca aagcggtaca cggctggaa catgtcagc aggcttttga caaacacgaa 360
 ggctgttat tcatcacgcc gcacatcgcc agctacgatt tgggcggacg ctacatcagc 420
 cagcagcttc cgttcccgct gaccgccatg tacaaaaccgc cggaaaatcaa agcgatagac 480
 aaaatcatgc aggcggcag ggttcgcgc aaaggaaaaa ccgcgcctac cagcatacaa 540
 ggggtcaaac aaatcatcaa agccctgcgt tcggggcagc aaccatcgctc ctgcccggacc 600
 acgtccccctc ccctcaagaa ggcggggaaag gcgtatgggt ggatttcttc ggcaaacctg 660
 cctataccat gacgctggcg gcaarattgg cacacgtcaa aggcgtaaaa accctgtttt 720
 tctgctgcga acgcctgcct ggcggacaag gtttgcattt gcacatccgc cccgtccaag 780
 ggaattgaa cggcgacaaa gcccattatgatg ccggcgtgtt caaccgcaat gcccgaatatt 840
 ggatacgcgg tttccgacg catatc 866

<210> 1370
 <211> 288
 <212> PRT
 <213> Neisseria meningitidis

<400> 1370

Met Phe Arg Leu Gln Phe Arg Leu Phe Pro Pro Leu Arg Thr Ala Met
1 5 10 15

His Ile Leu Leu Thr Ala Leu Leu Lys Cys Leu Ser Leu Leu Pro Leu
20 25 30

Ser Cys Leu His Thr Leu Gly Asn Arg Leu Gly His Leu Ala Phe Tyr
35 40 45

Leu Leu Lys Glu Asp Arg Ala Arg Ile Val Ala Asn Met Arg Gln Ala
50 55 60

Gly Leu Asn Pro Asp Pro Lys Thr Val Lys Ala Val Phe Ala Glu Thr
65 70 75 80

Ala Lys Gly Gly Leu Glu Leu Ala Pro Ala Phe Phe Arg Lys Pro Glu
85 90 95

Asp Ile Glu Thr Met Phe Lys Ala Val His Gly Trp Glu His Val Gln
100 105 110

Gln Ala Leu Asp Lys His Glu Gly Leu Leu Phe Ile Thr Pro His Ile
115 120 125

Gly Ser Tyr Asp Leu Gly Gly Arg Tyr Ile Ser Gln Gln Leu Pro Phe
130 135 140

Pro Leu Thr Ala Met Tyr Lys Pro Pro Lys Ile Lys Ala Ile Asp Lys
145 150 155 160

Ile Met Gln Ala Gly Arg Val Arg Gly Lys Thr Ala Pro Thr
165 170 175

Ser Ile Gln Gly Val Lys Gln Ile Ile Lys Ala Leu Arg Ser Gly Glu
180 185 190

Ala Thr Ile Val Leu Pro Asp His Val Pro Ser Pro Gln Glu Gly Gly
195 200 205

Glu Gly Val Trp Val Asp Phe Phe Gly Lys Pro Ala Tyr Thr Met Thr
210 215 220

Leu Ala Ala Xaa Leu Ala His Val Lys Gly Val Lys Thr Leu Phe Phe
225 230 235 240

Cys Cys Glu Arg Leu Pro Gly Gly Gln Gly Phe Asp Leu His Ile Arg
245 250 255

Pro Val Gln Gly Glu Leu Asn Gly Asp Lys Ala His Asp Ala Ala Val
260 265 270

Phe Asn Arg Asn Ala Glu Tyr Trp Ile Arg Arg Phe Pro Thr His Ile
275 280 285

<210> 1371
<211> 897
<212> DNA
<213> Neisseria meningitidis

<400> 1371
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accggccctgc tcaaatgcct ctccctgctg ccgtttccct gtctgcacac gctggaaac 120
cggtcgac atctgcgtt ttaccttta aaggaagacc gcgcgcgcat cgtcgccaat 180
atgcgtcagg caggcatgaa tcccgacccc aaaacggtca aagccgttt tgccgaaacg 240
gcaaaaaggcg gtttgaact tgcccccgcg ttttcagaa acccgaaaga catagaaaca 300
atgttcaaag cggtacacgg ctggaaacat gtgcagcagg ctttggacaa acacgaaggg 360
ctgctattca tcacggcga catcgccagc tacgatttgg gcggacgcta catcagccag 420
cagttccgt tcccgtgac cgccatgtac aaaccgcca aaatcaaagc gatagacaaa 480
atcatgcagg cgggcagggt tcgcggcaaa ggaaaaacgg cgcctaccag catacaaggg 540
gtcaaacaaa tcatcaaagc cctgcgttcg ggcgaagcaa ccatcgtcct gcccgaccac 600
gtcccctccc ctcaagaagg cggggaaaggc gtatgggtgg atttcttcgg caaacctgcc 660
tataccatga cgctggcggc aaaattggca cacgtcaaag gcgtgaaaac cctgttttc 720
tgctgcgaac gcctgcctgg cggacaagg ttcgatttgc acatccgccc cgtccaaggg 780
gaattgaacg gcgacaaacg ccatgatgcc gccgtgtca accgcaatgc cgaatattgg 840
atacgccgtt ttccgacgca gtatctgttt atgtacaacc gctacaaaat gccgtaa 897

<210> 1372
<211> 298
<212> PRT
<213> Neisseria meningitidis

<400> 1372
Met Phe Arg Leu Gln Phe Arg Leu Phe Pro Pro Leu Arg Thr Ala Met
1 5 10 15

His Ile Leu Leu Thr Ala Leu Leu Lys Cys Leu Ser Leu Leu Pro Leu
20 25 30

Ser Cys Leu His Thr Leu Gly Asn Arg Leu Gly His Leu Ala Phe Tyr
35 40 45

Leu Leu Lys Glu Asp Arg Ala Arg Ile Val Ala Asn Met Arg Gln Ala
50 55 60

Gly Met Asn Pro Asp Pro Lys Thr Val Lys Ala Val Phe Ala Glu Thr
65 70 75 80

Ala Lys Gly Gly Leu Glu Leu Ala Pro Ala Phe Phe Arg Lys Pro Glu
85 90 95

Asp Ile Glu Thr Met Phe Lys Ala Val His Gly Trp Glu His Val Gln
100 105 110

Gln Ala Leu Asp Lys His Glu Gly Leu Leu Phe Ile Thr Pro His Ile
115 120 125

Gly Ser Tyr Asp Leu Gly Gly Arg Tyr Ile Ser Gln Gln Leu Pro Phe
130 135 140

Pro Leu Thr Ala Met Tyr Lys Pro Pro Lys Ile Lys Ala Ile Asp Lys
 145 150 155 160
 Ile Met Gln Ala Gly Arg Val Arg Gly Lys Gly Lys Thr Ala Pro Thr
 165 170 175
 Ser Ile Gln Gly Val Lys Gln Ile Ile Lys Ala Leu Arg Ser Gly Glu
 180 185 190
 Ala Thr Ile Val Leu Pro Asp His Val Pro Ser Pro Gln Glu Gly Gly
 195 200 205
 Glu Gly Val Trp Val Asp Phe Phe Gly Lys Pro Ala Tyr Thr Met Thr
 210 215 220
 Leu Ala Ala Lys Leu Ala His Val Lys Gly Val Lys Thr Leu Phe Phe
 225 230 235 240
 Cys Cys Glu Arg Leu Pro Gly Gly Gln Gly Phe Asp Leu His Ile Arg
 245 250 255
 Pro Val Gln Gly Glu Leu Asn Gly Asp Lys Ala His Asp Ala Ala Val
 260 265 270
 Phe Asn Arg Asn Ala Glu Tyr Trp Ile Arg Arg Phe Pro Thr Gln Tyr
 275 280 285
 Leu Phe Met Tyr Asn Arg Tyr Lys Met Pro
 290 295

<210> 1373
 <211> 897
 <212> DNA
 <213> Neisseria meningitidis

<400> 1373
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 cgctcggtac atctggcggt ttacctttta aaggaagacc ggc当地cgcat cgtcgccaat 180
 atgcggcagg cgggtttgaa ccccgacccc aaaacgggtca aagccgttt tgccgaaacg 240
 gcaaaaggcg gtttggaaact tgcccccgcg ttttcagaa aaccggaaga catagaaaca 300
 atgttcaaag cggtacacgg ctggaaacat gtgcagcagg ctttggacaa acacgaaggg 360
 ctgctattca tc当地cggcga catcggcagc tacgatttgg gc当地gacgcta catcagccag 420
 cagcttccgt tcccgtgac cc当地catgtac aaaccgcccga aaatcaaagc gatagacaaa 480
 atcatgcagg cgggcagggt tc当地ggcgaaa ggaaaaaccg cgc当地taccag catacaaggg 540
 gt当地aaacaaa tcatcaaagg cctgcgttcg ggc当地agcaa ccatcgtcct gccc当地gaccac 600
 gt当地ccctccc ct当地agaagg cggggaaaggc gt当地gggtgg atttcttgc当地gaaacctgccc 660
 tataccatga cgctggcggc aaaattggca cacgtcaaag gc当地gtaaaaac cctgttttc 720
 tgctgc当地ac gc当地ctgc当地gg cggacaagggt ttgc当地attgc acatccgccc cgtccaagg 780
 gaattgaacg ggc当地acaaggc ccatgatgcc gc当地gtgttca accgcaatgc cgaatattgg 840
 atacgccc当地ttccgacgca gt当地tgc当地ttt atgtacaacc gctacaaaaat gccgtaa 897

<210> 1374
 <211> 298
 <212> PRT

<213> Neisseria meningitidis

<400> 1374

Met	Phe	Arg	Leu	Gln	Phe	Arg	Leu	Phe	Pro	Pro	Leu	Arg	Thr	Ala	Met
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His	Ile	Leu	Leu	Thr	Ala	Leu	Leu	Lys	Cys	Leu	Ser	Leu	Leu	Pro	Leu
				20				25					30		
Ser	Cys	Leu	His	Thr	Leu	Gly	Asn	Arg	Leu	Gly	His	Leu	Ala	Phe	Tyr
					35			40					45		
Leu	Leu	Lys	Glu	Asp	Arg	Ala	Arg	Ile	Val	Ala	Asn	Met	Arg	Gln	Ala
					50			55				60			
Gly	Leu	Asn	Pro	Asp	Pro	Lys	Thr	Val	Lys	Ala	Val	Phe	Ala	Glu	Thr
					65			70			75		80		
Ala	Lys	Gly	Gly	Leu	Glu	Leu	Ala	Pro	Ala	Phe	Phe	Arg	Lys	Pro	Glu
					85				90				95		
Asp	Ile	Glu	Thr	Met	Phe	Lys	Ala	Val	His	Gly	Trp	Glu	His	Val	Gln
					100				105			110			
Gln	Ala	Leu	Asp	Lys	His	Glu	Gly	Leu	Leu	Phe	Ile	Thr	Pro	His	Ile
					115			120				125			
Gly	Ser	Tyr	Asp	Leu	Gly	Gly	Arg	Tyr	Ile	Ser	Gln	Gln	Leu	Pro	Phe
					130			135				140			
Pro	Leu	Thr	Ala	Met	Tyr	Lys	Pro	Pro	Lys	Ile	Lys	Ala	Ile	Asp	Lys
					145			150			155			160	
Ile	Met	Gln	Ala	Gly	Arg	Val	Arg	Gly	Lys	Gly	Lys	Thr	Ala	Pro	Thr
					165				170				175		
Ser	Ile	Gln	Gly	Val	Lys	Gln	Ile	Ile	Lys	Ala	Leu	Arg	Ser	Gly	Glu
					180				185				190		
Ala	Thr	Ile	Val	Leu	Pro	Asp	His	Val	Pro	Ser	Pro	Gln	Glu	Gly	Gly
					195			200				205			
Glu	Gly	Val	Trp	Val	Asp	Phe	Phe	Gly	Lys	Pro	Ala	Tyr	Thr	Met	Thr
					210			215				220			
Leu	Ala	Ala	Lys	Leu	Ala	His	Val	Lys	Gly	Val	Lys	Thr	Leu	Phe	Phe
					225			230			235			240	
Cys	Cys	Glu	Arg	Leu	Pro	Gly	Gly	Gln	Gly	Phe	Asp	Leu	His	Ile	Arg
					245				250				255		
Pro	Val	Gln	Gly	Glu	Leu	Asn	Gly	Asp	Lys	Ala	His	Asp	Ala	Ala	Val
					260				265			270			
Phe	Asn	Arg	Asn	Ala	Glu	Tyr	Trp	Ile	Arg	Arg	Phe	Pro	Thr	Gln	Tyr
					275			280			285				

Leu Phe Met Tyr Asn Arg Tyr Lys Met Pro
290 295

<210> 1375
<211> 1563

<212> DNA
<213> Neisseria gonorrhoeae

<400> 1375

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gtcatcgctc tggcggttagt cccagtggtgc cgcgtcgccg ttgattttca aaggcggttc 180
ggcgaagtgcg gtttgcgtgc gccattggcc gaagctgttg gtgcgttagt gcggcaggct 240
gccgttagttg ccgtcggcgc ggccttgtcc gtgcgcgtgg ttgcgtgtgaa cagggcaacg 300
cgacgattt acggggattt ggcggaaaggta cacacccaag cggtaacggtt gcgcgtcgcc 360
gtaatttgaac aaacgggctt gcaacatttt atccgggctc gcgccgatac cgggaacgag 420
gttgcgtcggt gcgaaaggcgg attgttccac atcggcgaag aagttttcgg gattgcgggtt 480
caactcgaat tcgcccactt caatcagcgg atagttttt ttgcggccaaa ctgggtca 540
gtcaaacgga tgataaggca ctttttcggc atcggcttca ggcattgactt ggatgtacat 600
cggtccatttc gggaaactcgc cgcgtcgat ggcttcgtac aggtcgcgtt gatggcttcc 660
gcgggtcgctg gcatgattt ttgcgtcgat ttcgtggc aggtttttaa tcccttgcgt 720
gctgcggaaa tggatttca cccaaaaacg ttgcggcgat tcgttccaga agctgttaggt 780
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gatgttaact tggcgcaggc cttcggcggcag cagcgtccag aagttccagt tgggttgc 900
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cggtcgcgcg aggaagaaca cgggcgtgtt gttgcgcacc acatcccagt tgccttcttc 1020
ggtatagaat ttcaacgca aaccgcggat gtcgcgttcc gcatcggctg cggcgccgtc 1080
gcctgcccacg gtggtaaac gggcgaacat ctcgggtttt ttgcggactt cgctgaaaat 1140
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acctttggcg tgcatacggc gtcggggat gacttcgcgc acgaagtccgg cgagtttttc 1260
attcagccac aaatcttcgc tcagcagggg gccgcgcggg cggcggtca ggctgttttgc 1320
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agtcatcgct cttgttccctt ttctcagggtt ggtcaaatgg ggggcaaaacg gtttacagta 1440
cgatttggcg gaaagcgtat tcgtaaccgg ttcttgatt gtaataaaatt tcttgaatcg 1500
acattttattt ttcctttgc aaaaactatgt gatgcgatta tacgccaaga ttttcgttat 1560
taa 1563

<210> 1376

<211> 520

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1376

Met Ala Val Phe Asp Glu Val Gly Arg Ile Ala His Gly Cys Gly Gly
1 5 10 15

Val Val Lys Gln Ser Leu Phe Leu Arg Val Val His Gln Val Glu Gln
20 25 30

Gly Ala Arg Leu Ala Glu Val Val Ile Val Leu Ala Val Val Pro
35 40 45

Val Cys Arg Val Ala Val Asp Phe Gln Arg Arg Phe Gly Glu Val Gly
50 55 60

Leu Leu Leu Pro Leu Ala Glu Ala Val Gly Phe Val Val Arg Gln Ala
65 70 75 80

Ala Val Val Ala Val Gly Ala Ala Leu Ser Val Ala Leu Val Ala Val
85 90 95

Asn Arg Ala Thr Arg Thr Ile Asp Gly Asp Leu Ala Glu Val His Thr
100 105 110

Gln Ala Val Thr Leu Arg Val Gly Val Ile Glu Gln Thr Gly Leu Gln
115 120 125

His Phe Ile Arg Ala Arg Ala Asp Thr Gly Asn Glu Val Ala Arg Cys
130 135 140

Glu Gly Gly Leu Phe His Ile Gly Glu Glu Val Phe Gly Ile Ala Val
145 150 155 160

Gln Leu Glu Phe Ala His Phe Asn Gln Arg Ile Val Phe Phe Arg Pro
165 170 175

Asn Phe Gly Gln Val Lys Arg Met Ile Arg His Phe Phe Gly Ile Gly
180 185 190

Phe Arg His Asp Leu Asp Val His Arg Pro Phe Arg Glu Leu Ala Ala
195 200 205

Leu Asp Gly Phe Val Gln Val Ala Leu Met Ala Phe Ala Val Val Gly
210 215 220

Asp Asp Phe Cys Ser Phe Phe Val Gly Gln Val Phe Asn Pro Leu Leu
225 230 235 240

Ala Ala Glu Met Glu Phe His Pro Lys Thr Phe Ala Arg Phe Val Pro
245 250 255

Glu Ala Val Gly Met Arg Thr Glu Ala Val His Met Ala Val Ala Gly
260 265 270

Gly Asn Thr Ala Val Ala His His Asp Gly Asn Leu Val Gln Gly Phe
275 280 285

Gly Gln Gln Arg Pro Glu Val Pro Val Val Cys Gly Gly Thr His Ile
290 295 300

Gly Ala Arg Ile Ala Phe Asp Gly Phe Val Gln Val Gly Glu Phe Ala
305 310 315 320

Arg Val Ala Gln Glu Glu His Gly Arg Val Val Ala Asp His Ile Pro
325 330 335

Val Ala Phe Phe Gly Ile Glu Phe Gln Arg Lys Thr Ala Asp Val Ala
340 345 350

Phe Arg Ile Gly Cys Ala Ala Leu Ala Cys His Gly Gly Glu Thr Gly
355 360 365

Glu His Leu Gly Phe Phe Ala Asp Phe Ala Glu Asn Phe Gly Ala Gly
 370 375 380
 Val Phe Gly Asp Val Val Cys Tyr Gly Lys Arg Thr Glu Arg Ala Arg
 385 390 395 400
 Thr Phe Gly Val His Thr Ala Phe Gly Asp Asp Phe Ala His Glu Val
 405 410 415
 Gly Glu Phe Phe Ile Gln Pro Gln Ile Leu Arg Gln Gln Gly Ala Ala
 420 425 430
 Arg Ala Gly Gly Gln Ala Val Leu Ile Val Gly Asn Gly Arg Ala Val
 435 440 445
 Val His Gly Gln Met Gly Tyr Gly Ala Phe Gly Gly Ser His Arg Ser
 450 455 460
 Cys Ser Phe Ser Gln Val Gly Gln Met Gly Gly Lys Arg Leu Thr Val
 465 470 475 480
 Arg Phe Gly Gly Lys Arg Ile Arg Asn Arg Phe Leu Asp Cys Asn Lys
 485 490 495
 Phe Leu Glu Ser Thr Phe Tyr Phe Pro Phe Ala Lys Thr Met Asp Ala
 500 505 510
 Ile Ile Arg Gln Asp Phe Arg Tyr
 515 520

<210> 1377
 <211> 1322
 <212> DNA
 <213> Neisseria meningitidis

<400> 1377
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 tgccttttc tgcgcgtcgt tcatacggtt gaacaggcg cgccgttggc tgaaatagtc 120
 gtcatgtct tggcgtagt cccagtgtgc cgctcgccg ttgattttca aaggcggttc 180
 ggcgaatcg gggttgtgtc gccattggcc gaagctgttg gttcgttagt gcggcaggct 240
 gccgyagttt ccgtcggcgc gccttgccc gtyggstgr ttgctgtgaa casggcaacg 300
 cggacgattt acggaaattt ggcggaagtt tacgccccaa cggtagcgtt gtgcgtcgcc 360
 gtaattgaac aaacgcgtt gcagcatttt atctsggctg ggcggacac cgggaacgag 420
 gttgctcggt gcgaaggcg attgttccac atcggcgaag aagtttccgg gattgcgtt 480
 ctcaaacgga tgataaggta cttttccgc gtctgcttca ggcatgactt ggatgtacat 540
 cgtccatttc ggaaactcgc cgcttcgtat ggcttstat aagtgcgcgt gatggctttc 600
 gcggtcgctg gcgatgattt tggcggcttc ttctgtggc aggtttttaa tgcctgttg 660
 ggtgcggaaa tggaaatttca cccaaaaacg ctcgcctgtc tcgttccaga agctgttaggt 720
 atgcgaaccg aagccgtgca tatggcggtt gccggcgaaa atgcccgtt cgctcatcac 780
 gatggtaact tggtcgtgt ctgcggcag cagcgtccag aagtcccagt tgtttgccg 840
 agagcgcata ttggcgcgcg gtcgcgttt gacggcttt ttcaggtcg ggaacttacg 900
 cgggtcgcc aggaagaaca cgggcgttt gttgccgacc acatcccagt tgccttctc 960
 ggtataaaat ttcaaggcaa aaccgcggat gtcgcgttct gcatcggtcg cgccgcgttc 1020
 gcctgccacg gtggtaaac gggcgaacat ctcggtttt tgcctgcact cgctgaagat 1080

tcctttggcg tgcatacggc gttcgggat gacttcgcgc acgaagtcgg cgagttttc 1140
agtcatcgct cttgtccctt ttctcagggt ggtcaaatgg gggtaaacgg cttacagtac 1200
gatttgcgg aaagcgtatt cgtAACCGGT ttcttgattt caataaattt cttgaatcga 1260
cattttattt ccctttgtaa aaaactatgg atgcgactat acgccaagat tttcgctatt 1320
aa 1322

<210> 1378

<211> 520

<212> PRT

<213> Neisseria meningitidis

<400> 1378

Met Ala Val Phe Asp Glu Val Gly Arg Val Ala His Cys Gly Gly Gly
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Val Ala Glu Gln Cys Leu Phe Leu Arg Val Val His Gln Val Glu Gln
20 25 30

Gly Ala Arg Leu Ala Glu Ile Val Val Ile Val Leu Ala Val Val Pro
35 40 45

Val Cys Arg Val Ala Val Asp Phe Gln Arg Arg Phe Gly Glu Ser Gly
50 55 60

Leu Leu Leu Pro Leu Ala Glu Ala Val Gly Phe Val Val Arg Gln Ala
65 70 75 80

Ala Xaa Val Ala Val Gly Ala Ala Leu Pro Val Ala Xaa Xaa Ala Val
85 90 95

Asn Xaa Ala Thr Arg Thr Ile Asp Gly Asn Leu Ala Glu Val Tyr Ala
100 105 110

Gln Thr Val Ala Leu Cys Val Gly Val Ile Glu Gln Thr Arg Leu Gln
115 120 125

His Phe Ile Xaa Ala Gly Ala Asp Thr Gly Asn Glu Val Ala Arg Cys
130 135 140

Glu Gly Gly Leu Phe His Ile Gly Glu Glu Val Phe Gly Ile Ala Val
145 150 155 160

Gln Leu Glu Phe Ala His Phe Asn Gln Arg Ile Val Phe Phe Arg Pro
165 170 175

Asn Phe Gly Gln Val Lys Arg Met Ile Arg Tyr Phe Phe Arg Val Cys
180 185 190

Phe Arg His Asp Leu Asp Val His Arg Pro Phe Arg Lys Leu Ala Ala
195 200 205

Phe Asp Gly Phe Xaa Xaa Val Ala Leu Met Ala Phe Ala Val Val Gly
210 215 220

Asp Asp Phe Gly Gly Phe Phe Val Gly Gln Val Phe Asn Ala Leu Leu
225 230 235 240

Gly Ala Glu Met Glu Phe His Pro Lys Thr Leu Ala Cys Phe Val Pro
245 250 255

Glu Ala Val Gly Met Arg Thr Glu Ala Val His Met Ala Val Ala Gly
260 265 270

Gly Asp Ala Ala Val Ala His His Asp Gly Asn Leu Val Gln Cys Phe
275 280 285

Gly Gln Gln Arg Pro Glu Val Pro Val Val Cys Gly Arg Ala His Ile
290 295 300

Gly Ala Arg Val Ala Phe Asp Gly Phe Val Gln Val Gly Glu Leu Thr
305 310 315 320

Arg Val Ala Gln Glu Glu His Gly Arg Val Val Ala Asp His Ile Pro
325 330 335

Val Ala Phe Phe Gly Ile Lys Phe Gln Gly Lys Thr Ala Asp Val Ala
340 345 350

Phe Cys Ile Gly Cys Ala Ala Phe Ala Cys His Gly Gly Glu Thr Gly
355 360 365

Glu His Leu Gly Phe Phe Ala Asp Phe Ala Glu Asp Phe Gly Ala Gly
370 375 380

Val Phe Gly Asp Val Val Arg Tyr Gly Lys Arg Thr Glu Arg Ala Arg
385 390 395 400

Thr Phe Gly Val His Thr Ala Phe Gly Asp Asp Phe Ala His Glu Val
405 410 415

Gly Glu Phe Phe Ile Gln Pro Gln Ile Leu Arg Gln Gln Arg Ala Ala
420 425 430

Arg Thr Gly Gly Gln Ala Val Leu Ile Val Gly Asn Arg Arg Ala Val
435 440 445

Val His Gly Gln Met Gly Tyr Arg Ala Phe Gly Gly Ser His Arg Ser
450 455 460

Cys Ser Phe Ser Gln Val Gly Gln Met Gly Gly Lys Arg Leu Thr Val
465 470 475 480

Arg Phe Gly Gly Lys Arg Ile Arg Asn Arg Phe Leu Asp Cys Asn Lys
485 490 495

Phe Leu Glu Ser Thr Phe Tyr Phe Pro Phe Val Lys Thr Met Asp Ala
500 505 510

Thr Ile Arg Gln Asp Phe Arg Tyr
515 520

<211> 1562
<212> DNA
<213> Neisseria meningitidis

<400> 1379
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gtcatcgctc tggcggttagt cccagtgccg cgccgtcccg ttgattttca aaggcggttc 180
ggcgaagtgc ggctgctgct gccattggcc gaagctgtt gttcgtagt gcccggcaggct 240
gccgtagttt ccgtcggcgc gtccctgtcc gtcgcgttgg ttgctgtgaa cagggcaacg 300
cgacgggtt acagggtttt ggcggaaagtt cacgccaag cggtagcgtt gccgtccggc 360
gtaattgaac aaacgcgcct gcaacatttt atctggctg gccgcacac cgggaacgag 420
gttgcgttgcg gccaaggcgg attgttccac atcggcgaag aagtttcgg gattgcgtt 480
caactcgaat tcgcccactt caatcagcgg atagttttt ttcggccaaa ctttggtcaa 540
gtcaaacggaa tgatacggca cttttccgc atcggcttca gcatgactt ggtatgtacat 600
cggtccatttc gaaaaactcgc cgccgtcgat ggcttgcgtt acgttgcgtt gatggctt 660
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antcatcgct ctgttgcgtt ttctcagggtt ggtcaaatgg gggtaaacgg cttacagtac 1440
gatttggcgg aaagcgtatt cgttgcgtt ttcttgcgtt caataaattt cttgaatcga 1500
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<210> 1380
<211> 520
<212> PRT
<213> Neisseria meningitidis

<400> 1380
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Val Ala Glu Gln Cys Leu Phe Leu Arg Val Val His Gln Val Glu Gln
20 25 30

Gly Ala Arg Leu Ala Glu Ile Val Val Ile Val Leu Ala Val Val Pro
35 40 45

Val Arg Arg Val Ala Val Asp Phe Gln Arg Arg Phe Gly Glu Val Gly
50 55 60

Leu Leu Leu Pro Leu Ala Glu Ala Val Gly Phe Val Val Arg Gln Ala
65 70 75 80

Ala Val Val Ala Val Gly Ala Ser Leu Ser Val Ala Leu Val Ala Val
85 90 95

Asn Arg Ala Thr Arg Thr Val Asp Arg Asp Leu Ala Glu Val His Ala
100 105 110

Gln Ala Val Ala Leu Arg Val Gly Val Ile Glu Gln Thr Arg Leu Gln
115 120 125

His Phe Ile Trp Ala Gly Ala Asp Thr Gly Asn Glu Val Ala Arg Cys
130 135 140

Glu Gly Gly Leu Phe His Ile Gly Glu Glu Val Phe Gly Ile Ala Val
145 150 155 160

Gln Leu Glu Phe Ala His Phe Asn Gln Arg Ile Val Phe Phe Arg Pro
165 170 175

Asn Phe Gly Gln Val Lys Arg Met Ile Arg His Phe Phe Arg Ile Gly
180 185 190

Phe Arg His Asp Leu Asp Val His Arg Pro Phe Arg Lys Leu Ala Ala
195 200 205

Leu Asp Gly Phe Val Gln Val Ala Leu Met Ala Phe Thr Val Val Gly
210 215 220

Asp Asp Phe Gly Gly Phe Phe Val Gly Gln Val Phe Asn Ala Leu Leu
225 230 235 240

Gly Ala Glu Met Glu Phe His Pro Lys Thr Leu Ala Cys Phe Val Pro
245 250 255

Glu Ala Val Gly Met Arg Thr Glu Ala Val His Met Ala Val Ala Gly
260 265 270

Gly Asp Ala Ala Val Ala His His Asp Gly Asn Leu Val Gln Cys Phe
275 280 285

Gly Gln Gln Arg Pro Glu Val Pro Val Val Cys Gly Arg Ala His Ile
290 295 300

Gly Ala Arg Val Ala Phe Asp Gly Phe Val Gln Val Gly Glu Leu Thr
305 310 315 320

Arg Val Ala Gln Glu Glu His Gly Arg Val Val Ala Asp His Ile Pro
325 330 335

Val Ala Phe Phe Gly Ile Glu Leu Gln Arg Lys Thr Ala Asp Val Ala
340 345 350

Phe Cys Ile Gly Cys Ala Ala Phe Ala Cys His Gly Gly Glu Thr Gly
355 360 365

Glu His Leu Gly Phe Phe Ala Asp Phe Ala Glu Asp Phe Gly Ala Gly
370 375 380

Val Phe Gly Asp Val Val Arg Tyr Gly Lys Arg Thr Glu Arg Ala Arg
385 390 395 400

Thr Phe Gly Val His Thr Ala Phe Gly Asp Asp Phe Ala His Glu Val
405 410 415

Gly Glu Phe Phe Ile Gln Pro Gln Ile Leu Arg Gln Gln Arg Ala Ala
420 425 430

Arg Thr Gly Gly Gln Ala Val Leu Ile Val Gly Asn Arg Arg Ala Val
435 440 445

Val His Gly Gln Met Gly Tyr Arg Ala Phe Gly Gly Xaa His Arg Ser
450 455 460

Cys Ser Phe Ser Gln Val Gly Gln Xaa Gly Gly Lys Arg Leu Thr Val
465 470 475 480

Arg Phe Gly Gly Lys Arg Ile Arg Asn Arg Phe Leu Asp Cys Asn Lys
485 490 495

Phe Leu Glu Ser Thr Phe Tyr Phe Pro Phe Val Lys Thr Met Asp Ala
500 505 510

Thr Ile Arg Gln Asp Phe Arg Tyr
515 520

<210> 1381

<211> 558

<212> DNA

<213> Neisseria gonorrhoeae

<400> 1381

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ggcaacgggtt tgttcggcat gggcaagctg ctgtgtgttc aacgccatgt cgccggcgat 180
gcgggttgc tcgtcctgtt gggtttggaa ggcagcggtt agcgtggctt ggacttcttc 240
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gtgtacttcg ttatttaa 558

<210> 1382

<211> 185

<212> PRT

<213> Neisseria gonorrhoeae

<400> 1382

Met Leu Leu Pro Ala Leu Gln Gln Gly Gly Phe Leu Ser Gly Gly
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Gly Phe Gly Leu Val Gly Gln Val Gln Gly Leu Val Phe Leu Leu Gln
20 25 30

Thr	Ala	Phe	Ala	Leu	Phe	Val	Leu	Gly	Asn	Gly	Leu	Phe	Gly	Met	Gly		
														35	40	45	
Lys	Leu	Leu	Leu	Leu	Gln	Arg	Gln	Phe	Ala	Ala	Asp	Ala	Val	Cys	Leu		
														50	55	60	
Val	Leu	Leu	Gly	Leu	Glu	Gly	Ser	Val	Glu	Arg	Gly	Leu	Asp	Phe	Phe		
														65	70	75	80
Gln	Phe	Gly	Gln	Thr	Leu	Phe	Val	Phe	Gly	Asn	Leu	His	Arg	Pro	Phe		
														85	90	95	
Arg	Gln	Phe	Gly	Leu	Leu	Phe	Phe	Asp	Leu	Gln	Leu	Val	Phe	Leu	Lys		
														100	105	110	
Leu	His	Ala	Asp	Leu	Leu	Leu	Leu	Leu	Pro	Asp	Ala	Leu	Gln	Leu	Arg		
														115	120	125	
Leu	Arg	Cys	Leu	Leu	Val	Ala	Phe	Asp	Ala	Leu	Val	Gln	Val	Leu	Pro		
														130	135	140	
Val	Ala	Asp	Leu	Phe	Phe	Gln	Thr	Gly	Asn	Leu	Leu	Ala	Gln	His	Ala		
														145	150	155	160
Ala	Phe	Val	Ala	Gln	Phe	Val	Tyr	Cys	Leu	Leu	Leu	Arg	Leu	Phe	Gly		
														165	170	175	
Ser	Leu	Gln	Gly	Val	Tyr	Phe	Val	Ile									
														180	185		

<210> 1383

<211> 558

<212> DNA

<213> Neisseria meningitidis

<400> 1383

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gcgggttgcc tcgtcctgct gggtttggaa ggcggcggtt agcgtggctt gggcttcc 240
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cagggtttgc tgatggcggaa ttgttcttc caaacgggca atctgctcgc gcaacacgcc 480
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<210> 1384

<211> 185

<212> PRT

<213> Neisseria meningitidis

<400> 1384

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1														5	10	15

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				20					25				30		
Thr	Thr	Phe	Ala	Leu	Phe	Val	Leu	Gly	Asn	Arg	Leu	Phe	Gly	Met	Gly
				35				40				45			
Lys	Leu	Leu	Leu	Leu	Gln	Arg	Gln	Phe	Ala	Ala	Asp	Ala	Val	Cys	Leu
				50			55				60				
Val	Leu	Leu	Gly	Leu	Glu	Gly	Gly	Val	Glu	Arg	Gly	Leu	Gly	Phe	Phe
				65		70			75			80			
Gln	Phe	Gly	Gln	Thr	Leu	Leu	Val	Phe	Gly	Asn	Leu	His	Arg	Pro	Phe
				85				90				95			
Arg	Gln	Leu	Gly	Leu	Phe	Phe	Asp	Leu	Gln	Leu	Val	Phe	Phe	Lys	
				100			105				110				
Leu	His	Ala	Asp	Leu	Leu	Leu	Leu	Leu	Met	Asn	Ala	Leu	Xaa	Leu	Arg
				115			120				125				
Leu	Arg	Cys	Leu	Leu	Val	Ala	Phe	Asp	Ala	Leu	Val	Gln	Val	Leu	Leu
				130			135				140				
Met	Ala	Asp	Leu	Phe	Phe	Gln	Thr	Gly	Asn	Leu	Leu	Ala	Gln	His	Ala
				145			150				155			160	
Ala	Leu	Val	Ala	Gln	Phe	Met	His	Cys	Leu	Leu	Leu	Arg	Leu	Phe	Gly
				165				170				175			
Ser	Leu	Gln	Gly	Val	Tyr	Phe	Val	Val							
				180			185								

<210> 1385

<211> 558

<212> DNA

<213> Neisseria meningitidis

<400> 1385

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gcggtttgc	tcgtctgtct	gggtttggaa	ggcggcattt	agtgtggctt	gggtttcttc	240
caattcgggc	agacgtcttt	cgtttcggc	aacctgcata	gcccatccg	ccaattcggt	300
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ctgtatggatg	cgctgcatct	gcgcctgcgc	cgcctgttt	tcgcgttgc	tgcgttgggt	420
cagggtttgc	tgtatggcggt	tttgttcttc	caaacgggca	atctgttgc	gcaacacgccc	480
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<210> 1386

<211> 185

<212> PRT

<213> Neisseria meningitidis

<400> 1386
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 20 25 30

 Thr Thr Phe Ala Leu Phe Val Leu Gly Asn Gly Leu Phe Gly Met Gly
 35 40 45

 Lys Leu Leu Leu Leu Gln Arg Gln Phe Ala Ala Asp Ala Val Cys Leu
 50 55 60

 Val Leu Leu Gly Leu Glu Gly Gly Ile Glu Cys Gly Leu Gly Phe Phe
 65 70 75 80

 Gln Phe Gly Gln Thr Leu Phe Val Phe Gly Asn Leu His Arg Pro Phe
 85 90 95

 Arg Gln Phe Gly Leu Leu Phe Phe Arg Leu Gln Leu Val Phe Phe Lys
 100 105 110

 Leu His Ala Asp Leu Leu Leu Leu Met Asp Ala Leu His Leu Arg
 115 120 125

 Leu Arg Arg Leu Leu Val Ala Phe Asp Ala Leu Val Gln Val Leu Leu
 130 135 140

 Met Ala Asp Leu Phe Phe Gln Thr Gly Asn Leu Phe Ala Gln His Ala
 145 150 160

 Ala Phe Val Ala Gln Phe Val His Arg Leu Leu Leu Arg Leu Phe Gly
 165 170 175

 Ser Leu Gln Gly Val Tyr Phe Val Val
 180 185

<210> 1387
 <211> 504
 <212> DNA
 <213> Neisseria gonorrhoeae

<400> 1387
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 ctgttcctga atctgcgcga gttttccctg cacggcgatg tattcttcgt ccagcgtgtg 180
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 aagcccgtat tggcggttgg cttccaacag ggcaagctgc gcctgtttca gacggcccttgc 420
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 ctgcaaagta gcgatgtcgt ctga 504

<210> 1388